each separated geographically from its neighbours.[1] There is also Williams' point (W.28) that in 1923 there was unclaimed land adjoining the 'hamlets' in the unit named Wasida (i.e., Jegasi-Sarahu). Like most other districts this consisted of two 'hamlet groups'. Horton (1962:6) says that sometimes villages, which 'are known to have been quite large' and stockaded (cf. Williams 1930:67, 164-6), were separated by tracts of unclaimed virgin land until the time of the suppression of feuding.

This combination for better defence may have been characteristic of tribes throughout the Orokaiva area. We believe, however, that the subdividing of the tribe into discrete named groups of named villages (either district or 'hamlet group') would be unique to the mountain Orokaiva in the culture area; we do not have enough evidence to show if this feature is related to the earlier clustering for safety, and to the greater population density in this tribe.

The emergence of tribal subdivisions at this level, however limited or occasional their independence, seems consistent with the uncertainties encountered by observers in seeking to determine the limits, the local name and the distinctive cultural and linguistic characteristics of the inclusive political unit.[2]

At this point we shall identify the local patrilineal groups to be mentioned in the following resumé of the history of local settlement and then make a preliminary comment on landholding by individuals.

The members of Jegase clan in Sivepe are divided among 4 named subgroups, each claiming to trace its origins to either of 2 contiguous villages occupied by all the ancestors of the Jegase in the neighbourhood. We shall call these subgroups lineages; they are Bebehupa,[3] Besewopa, Berekipa and Arehu. A fifth lineage called Hambai or Hambai'embo has died out only in the present generation, yet all but the key members of the group and a little

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[1] Seldom does the territory of a 'district' at present clearly appear distinct from others, and that of a 'hamlet group' even more rarely.

[2] Either 'parish' or 'subtribe' could be considered as a term for such a unit within the tribe. But rather than add to the confusion of terms used in descriptions of local organization we retain the terms which we have already adopted.

[3] The suffix -pa (or -ja, female) should strictly be used in addressing or referring to an individual member, but it now seems to be common local usage to refer to a group itself in this way, and we shall follow this usage.

428 before establishing a household. The older brother should in time provide the other with an equitable share of the land.

There is no system of primogeniture in theory or practice.[1] In one case, however, a childless man, who was adopted into the local branch of Jegase clan and has also married a Jegase woman, either has bequeathed his land to the leader of his wife's lineage who allocated it to his second son, or he has himself bequeathed it specifically to the boy (who was given his wife's deceased brother's name). Most of the patrimonial land and some land held by the woman are to be inherited by the elder son.

241 Turning to the extent of landholding, the 12 households studied hold 138 acres near Sivepe or 2.7 acres per head, all of it arable with the exception of little more than 1 or 2 per cent.[2] Some members claim to retain land in relatively distant areas where they or their forefathers originally lived. In cases where the Sivepe people had not exercised their rights to cultivate these land claims, no estimate of their size was made.

b. The history of local settlement

177 The territory of the mountain Orokaiva was opened up when a new road from Buna to the Yodda Valley goldfields near Kokoda was built in 1904. In this part of Orokaiva country individual tribes were not as isolated as elsewhere. Although the various tribes were initially described as being constantly warring, and likely to [721] attack government parties,[3] peace was secure within 4 years. Intertribal feuds were effectively suppressed, except for an occasional raid prompted by the docility of neighbouring tribes [166] under the novel conditions brought about by the arrival of the Europeans. Many tribes, including the 'Wasida', were able to settle on their outlying lands which formerly they had not occupied for fear of raids.

[464] Many of the people worked on the construction of the road, and later as carriers; by 1909 some had signed on for labour elsewhere

[184] [1] In this way, the mountain Orokaiva differ from at least one other Orokaiva tribe, the Yega at Beporo (R. Dakeyne: personal communication).

[162] [2] This density is the equivalent of 237 persons per square mile (cf. 300-500 per square mile for Southern Chimbu, Brown and Brookfield 1959:74). The Saiho Census Division, on the other hand, has only about 75 persons per square mile; however, as Map 2 indicates, it includes extensive areas of unoccupied and generally unused rainforest surrounding the concentration of populations with higher densities and separating them from their former enemies. Some of the land of the thousands of Kombu Sangara killed in 1951 also appears to fall inside the Saiho boundaries.

[3] See Territory of Papua 1903-4:39; ibid. 1904-5:14, 36.

[TEXT CONTINUED ON PAGE 41]

614 wider grouping of Jegase clansmen in the neighbourhood, which we
613 describe as the 'dispersed clan branch'. This consists of the reputed descendants of Jegase men said to have once occupied together the settlement Simbehata-Totogata on the territory since associated with the group. It now has its largest single nucleus at Sivepa but includes also the Bebehupa men scattered in other villages, who recently separated from other members of the lineage now at Sivepa.[1]

Several writers have described one order or another of localized patrilineal groups in this census division as lineages (Belshaw 1951:2; Reay 1953:115; Norton 1962:3); in calling the Sivepa groups lineages, we have maintained some consistency with the terminology used for their formal counterparts in the survey at Inonda.[2]

Each lineage in our sample at Sivepa retains a name said to have been transmitted from some remote patrilineal ancestor and each shares a distinctive plant emblem, arahu, associated with its identity as an agnatic group (see Appendix D). Williams (1925:410) notes that the arahu of matrilateral kin is used by householders to mark their distinctive personal identity within their patrilineal group.

The adult male membership of lineages represented in the sample, excluding absentees who have moved from the neighbourhood, ranges from 1 (Arehu lineage) to 9 in the case of the Bebehupa members of the dispersed clan branch. Members of each group trace precise genealogical relationships to one another. All the Bebehupa men with one possible exception can do so. Genealogical memory is short. Ancestry can be traced back to men of the generation of

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[1] We should emphasize that the 'clan branch' and 'dispersed clan branch' are not groups at different levels of a hierarchical lineage structure and that the distinction is a device for discussing the Jegase groups in question.

[2] At Sivepa we found that the use of the term ahije (or haije) was
601 not restricted to reference to the founder of a lineage as at
184 Inonda (Crocombe and Hogbin 1963:17). Any members of Jegase clan are called Jegasetahije and the founder of the clan is also their ahije. Moreover, the term may be used in another sense both to refer to any of ego's male cognatic ancestors or to denote any (or all) of a man's immediate cognatic descendants. Similarly epihe, said by Norton to refer to a lineage seems to be used rather for ego's maternal uncle or grandfather, paternal grandfather, etc., epimane (pl.) being a term for a number of these kinsmen, not for a number of lineages or a clan. Unlike ahije, this term is not used for descending generations too.

A, [See Category 613, p. 110--Analyst]

241 With the passage of the cultivation cycle over a Chimbu sub-
171 clan's territory, gardeners move from one man's house to another,
361 either as a persisting group of agnates working contiguous holdings, or as individuals joining more transient groups which are dissolved as gardens near the house revert to fallow (ibid:98; Brown and Brookfield 1959:68). As they extended their cultivation to other areas, 37 per cent of a sample of 193 men had moved from one men's house to another over a period of 16 months (Brookfield and Brown 1963:98) and the men's houses themselves last no longer than 5 years (ibid:12).

241 In Sivepe on the other hand, gardens tend to be scattered and isolated. Father and son often have adjacent plots in one garden area but the son usually has at least 1 other garden elsewhere. A young married man often has 1 garden on the land of his wife's father, whom he will periodically assist in his garden. Older men in general adopt the technique of progressively planting and clearing a single large area while younger and more active men, usually with more obligations to affines, tend to cultivate several scattered smaller plots.

[621] There is no local group or extended kinship group which
[602] commonly combines to make a block of contiguous gardens. Even when all members of the village plant simultaneously for a special feast, the gardens are not adjacent. A man usually takes advantage of the choice of exercising planting rights on the land of a wide range of kinsmen (not necessarily his agnates), both those within the village and to a lesser extent kinsmen from other villages. Several had current gardens on their mother's brother's land, some on the nearby land of their wife's brother, sister's husband or daughter's husband.

613 In other Orokaiva areas (such as Inonda) gardeners of one
614 lineage often have a reciprocal arrangement with another lineage
● 184 of the same clan in the village to cultivate a parcel of their land with them, but this is not a common practice at Sivepe. In the few cases where several kinsmen have made adjacent gardens the gardeners are mostly cognatic kin from different clans or villages and each will probably make his next garden with different kin or on an isolated parcel.

166 Encroachment on boundaries is feared[1] but does not seem to
M result in repeated changes of residence as it does among the
425

[578]

[1] The 3 instances of boundary disputes recorded were between Bebehupa and Usohu people. According to the older men the Usohu were formerly a Jegase group and they share many boundaries with the Bebehupa; the recent split in Binduta between the 2 groups has been accompanied by friction over a number of issues including the definition of boundaries.

425 f. Local organisation and land transfers

(i) Land use. The use of land is necessary in two senses to validate a land claim among these Orokaiva. Usage is an important factor in determining the extent to which land is identified with the component units of the group which claims to hold land (cf. Williams 1928:125 and Plant 1951: Appendix 2).

425 184 Four factors have produced a closer identification between a household and the patrimonial land it cultivates than in some other Orokaiva areas: first, the frequency with which an adopted member retains and transmits to his own descendants land which he acquired from his natal group; second, the limited supply of land; third, continual use by people of the lineage land used by and inherited from their fathers, in that no special access to land of other lineages of the clan branch is accorded to them simply as a group of co-resident agnates; and fourth, a fertile soil which allows a short fallow cycle after single plantings of a predominant soil-exhausting crop.

613 428 [848] It has been common practice for distinct genealogical branches within the lineage to exercise continuous and exclusive rights to separate areas of lineage land. The small group within which these prescriptive rights are exercised and transmitted does not easily endure demographic changes and if there are no surviving male members, the rights it exercised may in certain circumstances devolve on a female member, for instance, and subsequently to her son, even if he is illegitimate, or perhaps a claim of a relatively close agnate will be overridden in favour of a distant clansman, with or without other cognatic ties to the group. When these rights are transmitted outside the direct male line, residence and land use are important as factors which influence the definition of the rights of the beneficiary vis-a-vis surviving members of the wider patrilineal group. As noted above the scope of the authority of members of the wider group in questions of land tends to have been limited by the frequent independent movement of the smaller units.

425 [606] [614] Our descriptions of the kinship composition of the village and neighbourhood and of the social elements of land use indicate that it is common to find men living and gardening in the same village or neighbourhood as their mother's or wife's kin and that the relationship with these people in certain cases overlays some patrilineal affiliation. Individual ties of clanship too are sometimes given new significance when reinforced by co-residence and exchanges of gardening rights. These patterns, we suggest, are correlated with repeated instances of transfers of prescriptive land rights from the small effective landholding group to kinsfolk of other lineages or clans.

The Orokaiva comprise a number of groups, with mutually intelligible dialects and a high degree of cultural uniformity, extending some sixty miles northwards from the Hydrographers Range and from the coast inland to the foothills of the Owen Stanleys. The overall population density is only 9.1 persons per square mile but the distribution is highly uneven (see Table 1.3) with major concentrations on the fertile northern slopes of Mt Lamington (63.8 persons per square miles in the Saiho census division) and the coastal periphery (62.2 in Gona census division). The grassland and more northerly forest areas are only sparsely populated.

Table 1:3

Popondetta sub-district: demographic characteristics of selected census divisions, 1963

	Crude population density (persons per square mile)	Cultivable acres per head	Mean size of settlement
Saiho	63.8	9	216
Gona	62.2	6	221
Oro Bay	43.6	9	103
Sangara	26.7	9	197
Popondetta	17.2	19	109
Togahau	16.9	25	146
Asigi	9.1	53	87
Buna	8.4	31	94
Huhurindi	6.7	53	69

Source: Population data derived from DDA 1963 census data (1961 Popondetta, 1962 Saiho).

Small villages are the characteristic unit of settlement, with houses disposed in a more or less rectangular form around a central earth or grass 'square'. Their size varies in relation to overall population density, but nowhere exceeds 720 persons,[1] the mean being 144 persons. The social organisation and economy of the Orokaiva contribute to considerable instability in settlements, both in composition and site.

A village normally contains more than one clan branch[2] and consequently is not necessarily a landholding unit. Its members may have closer ties of kinship with residents of other villages than

[1] Kiorota village in Saiho census division.

[2] See p.10.

Chapter 3

The village economy

433 [128] This chapter describes briefly the Orokaiva pattern of production and distribution, with particular reference to Sivepe and Inonda.[1] Traditionally the villager operated within quite narrowly circumscribed physical limits. Each community functioned largely as an independent subsistence unit, almost all the requirements of [251] life being produced through shifting agriculture and the subsidiary pursuits of fishing, hunting and foraging on its own land. Production [438] was directed almost entirely to immediate and direct consumption, none of the staple foodstuffs except yams lending themselves to storage; exchange was confined largely to kindred within the community or in closely neighbouring communities. Beyond this, minor and informal trade links had developed between some of the inland and coastal peoples, but the degree of inter-dependence established can be considered insignificant.

[436] The contemporary economy comprises both subsistence and monetary sectors, with the former dominating. Most money traffic is with the non-agricultural sector of the national economy and there is little movement of money between subsistence units.

244 (a) The subsistence sector

(1) Production. The pattern of subsistence production is, as yet, little modified by cash cropping, in spite of the latter being based on permanent tree crops which involve substantially different agricultural practices.

Gardens are made in secondary growth where the forest has regenerated over a fallow period of about ten years. Little primary forest survives among the Mt Lamington Orokaiva and, even where it [361] does, secondary growth is preferred for gardening as it is easier to clear. In addition to the shifts in garden locations, many [184] settlements also change sites at frequent intervals, the cycle appearing to be a little longer than the cultivation cycle. All

[1] More detailed descriptions are given in Crocombe and Hogbin 1963:7-13, Dakeyne 1965:54-92 and Rimoldi 1966:13-28.

settlements have access to garden land, hunting and foraging areas and creeks but there are considerable variations in availability of these resources, and others such as fish and potting clay. These variations are expressed in the relative significance of the different elements in the work and exchange patterns of different communities.

Within the community, the household is the principal economic unit, aiming at self-sufficiency in terms of procuring food, shelter, clothing and production equipment.[1] Thus, gardens are the responsibility of individual households, and the work group for any activity, including clearing and harvesting, seldom exceeds its adult members. Each household produces its own digging-sticks, spears, building materials, sleeping-mats, etc., but axes, bush knives, cooking utensils and clothing are usually obtained from trade stores. For most phases of production co-operation between households is of little importance.

A household may maintain between one and five gardens, three being the mean. These average 0.3 acres in size and are generally between five and twenty-five minutes' walk from the village. In some areas, including Inonda and the Yega area, it has recently become popular to plant kitchen gardens adjacent to the houses, often containing manioc, sweet potato, cucurbits, pineapple and even taro. Banana, coconut, breadfruit and '<u>hingi</u>' (betel pepper) trees are often planted at random around the periphery of the village and in the village square.

The process of garden preparation has been described in the articles cited above.[2] When all but the largest trees have been felled, most of the debris is burned and the remainder piled around the tree stumps. There is no preparation of the soil and crops are planted with the aid of a digging-stick. Gardens are weeded regularly in the early stages, but less frequently as they approach maturity. In the less densely settled areas where wild pigs are common, such as Inonda, most gardens need to be fenced; when separate households have contiguous gardens they usually fence them simultaneously and help each other in this more often than in any other garden task.

The staple food plant of the Orokaiva is taro (<u>Colocasia</u>) and comparatively small areas are planted with the subsidiary root crops of sweet potato, yams, 'German' taro (<u>Xanthosoma</u>) and manioc. Interplanted with the ground crops are large herbs and trees, such as

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[1] Exceptions occur in the case of the elderly or infirm, who are often supported by an offspring's household, and so frequently live in a house adjacent to one or more of them (see Map 4).

[2] See p.23.

A, [See Category 102, p. 38--Analyst]

Chapter 4

The two communities: Sivepe and Inonda

184 The villages of Sivepe and Inonda represent the extremes of population density, and therefore land availability, in the sub-district. There are significant differences between them in resources and in the degree and character of their participation in the monetary economy and their interactions with the principal external agencies.

Sivepe

133 [134] 137 311 Sivepe is situated 1,300 feet above sea level on the lower north-western slopes of Mt Lamington. Its land is classified by the CSIRO survey (1964:32) as belonging to the Awala Land System and is characterised by fertile loam topsoils and a close-textured drainage system. The vegetation comprises predominantly secondary forest and various stages of regrowth, with little grassland. The land-use potential is regarded as high and the fertile, well-drained soils are best suited for perennial (tree) crops.

301 [131] The village is located in the most densely settled part of the sub-district, the Saiho census division, and there are eighteen villages within a radius of three miles (see Map 3). It has been on its present site for about ten years, but preparation of a new site, less than one mile away, was commenced late in 1964. Sivepe is twenty-eight miles from Popondetta by road, the last three miles being a little-used jeep track linking Awala with the villages on the lower slopes of Mt Lamington. Consequently, coffee and rubber have to be carried to Awala (or nearby Saiho) to be sold and purchases are normally made in the trade stores there. At Awala are a European rubber plantation, a rubber factory which purchases village latex and a well-stocked trade store. At Saiho are two trade stores, the principal Administration hospital for the Northern District (where medical orderlies and infant welfare nurses are trained) and a primary 'T' school. In mid-1964 a daily bus service was established between Saiho and Popondetta.

491 [499] Also in mid-1964, several villages voluntarily commenced the construction of a new all-weather road, linking Sasembata mission

[TEXT CONTINUED ON PAGE 37]

assumptions on which the thesis is based warrant discussion at this stage. These are, one, that in the 'pure subsistence unit'

> What they produce is either consumed by themselves or goes to waste. Saving is limited to the storage of such necessities as can be stored as a reserve against a rainy day, a poor harvest or sickness, and to occasional preparation for increased consumption in feasts and ceremonial. Beyond that there is no incentive to save, or to produce at a level beyond their normal immediate consumption. The level of production is therefore subject to a very definite ceiling, which may be well below their potential capacity to produce, in that when they have produced sufficient of what they know how to produce to meet their immediate needs, there is no point in producing more. The production of a surplus beyond that requirement adds nothing to their satisfactions, present or future. (Fisk 1962:463)

and, two, that 'economic and ceremonial activity are distinct and separate':

> Ceremonial activity and the preparations therefor we shall treat in the category of leisure activity, and as affecting economic activity only to the extent that certain amounts of leisure activity are socially regarded as necessary, and that the amounts of labour available for economic activities are socially limited thereby. (Fisk 1962:464)

Power and prestige in New Guinea are dependent largely upon the control of goods and services. There is, ideally, no limit to the number of wives, pigs and gardens a man may have, and the more he has the greater the productive capacity of his particular subsistence unit. As his level of production increases, that part which is distributed as opposed to consumed increases disproportionately, and so the range and degree to which others are indebted to him increases. Not only does this serve to elevate his status but it provides him with considerable security in times of stress and when making further investments. Insofar as the distributive system itself is concerned, ceremonial activities (although emphasised in the anthropological literature) may be less significant and time-consuming than informal gift-giving; although the principle of reciprocation is at the basis of both, specific goods and services do have exchange values so that they do not necessarily operate on a like-for-like basis. Thus the pattern tends towards a powerful (wealthy) individual distributing goods (foodstuffs) and being reciprocated with services (labour). This has the effect of increasing his capacity to produce and so further elevating his status. Political, social and economic behaviour are therefore inextricably connected and 'leisure' activities cannot be considered apart from the economic system. An example from the Orokaiva will serve to demonstrate the point.

Chapter 8

The two villages compared

433 184 (a) Levels of activity in relation to available resources

In expending an average of 43.5 hours per man-week the Inonda villagers are slightly more active than their Sivepe counterparts, but the difference relates to the subsistence sector. Although both are communities of cultivators with taro the staple crop, the supplementary food producing activities are substantially more significant in Inonda, with fishing particularly important during the wet season. This more diversified economy partly explains the higher level of subsistence activity at Inonda (see Table 8:1).

More time is required to achieve subsistence at Inonda, principally because of the journey to work: 25 per cent of all activity time is devoted to travelling, even at the new site, compared with only 15 per cent at Sivepe.[1] Thus, if time spent in travelling is deducted, the difference between the two villages is eliminated, Inonda spending 25.1 hours per man-week on subsistence and Sivepe 25.5 hours.

Environmental differences provide some explanation for Inonda's subsistence economy being more diversified and the location of activities more dispersed. Not only are the soils around Sivepe of a uniformly high agricultural value but all the land is forested [311] and therefore potentially available for cultivation. By contrast, the soils at Inonda are of variable quality and at least one-third of the total area is grassland and therefore unavailable for cultivation according to present practices, while even some of the forested areas are unsuitable due to the infertility of their soils. Most Inonda gardens are made on a land system covering only one- [241] fifth of the total area. Probably on account of this generally lower soil fertility, the fallow period at Inonda is about ten years compared with only six at Sivepe and, using Crocombe and Hogbin's and Rimoldi's estimates of the garden requirements per head of

[1] The contrast is even more marked if the uncorrected percentages are used - 32 per cent and 18.3 per cent respectively.

A, [See Category 461, p.171--Analyst]

population in the two villages, it is estimated that the total land requirements per person in Sivepe are therefore only 2.5 acres compared with 14.8 acres in Inonda.[1] Given the lack of uniformity in the hinterland of a village which is located at the forest-grassland boundary, where subsistence is primarily derived from the forest and where garden land requirements are high, it is to be expected that travelling times would be higher for Inonda and that the economy should be diversified by using the non-cultivated areas. There are abundant sago palms in the swamps fringing the rivers and, in the absence of breadfruit (numerous in the cultivated areas at Sivepe), these are exploited in the dry season to compensate for the scarcity of garden foods. In fact, Inonda experiences both a drier and more distinctly seasonal climate and this, together with the greater abundance of land, accounts for the greater significance of supplementary food producing activities. Only hunting is practised to much the same degree in the two villages.

The transfer of Inonda to a new site did not lead to the expenditure of substantially more time on construction than in Sivepe, where the normal rhythm of repair and rebuilding was in operation. Since it is estimated that in Sivepe 0.7 of the 1.6 hours per man-week spent on construction are restricted to repairs and minor extensions to existing houses it seems that in Inonda, with the transfer in village site, such maintenance work ceased and the labour time so made available was directed entirely to constructing new houses. In effect, therefore, such moves are not as time-consuming as might be expected.

The external sector of the economy absorbs 26 per cent of total activity time in Sivepe and 23 per cent in Inonda, but in both cases only about one-third of this is directed towards cash production. Rather more time is spent in dealings with the external agencies, particularly in Sivepe by virtue of its proximity to a mission station and location in a densely populated area which is more frequently the focus of Administration and commercial interests.

In Inonda paid work is considerably more important than cash cropping, but it is essentially of a casual and temporary nature

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[1] The estimation of land requirements is derived from the following formula (adapted from Allan 1949):

$$100 \frac{CL}{P}$$

where:

P = percentage of the group territory that is arable under the given technology.
C = number of annual garden areas utilised in the agricultural cycle of cultivation and regeneration.
L = acreage of cultivated land per head of population per annum.

Table 8:1

Sivepe and Inonda: some contrasts in activity patterns
(hours per man-week)

	Sivepe	Inonda
Clearing	2.9	3.7
Subsistence gardening	13.2	11.7
(of which: taro gardening	9.1	6.6)
Other subsistence food production	2.5	7.8
(of which: fishing	0.2	3.8
hunting	1.8	2.0
sago-making	0.4	1.2)
Construction	1.6	2.0
Total - subsistence sector	30.0	33.5
Cash-producing	3.2	3.7
(of which: cash cropping	1.6	1.0
paid work	1.6	2.7)
External agencies	5.8	3.2
(of which: meetings	1.3	0.3
church work/ services	3.0	1.0)
Total - external sector	10.7	10.0
Total*	40.6	43.5

* A 't' test was applied to the mean weekly figures, to provide some measure of the significance of difference between the mean level of activity in the two samples, using the equation

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s'} \sqrt{\frac{N_1 N_2}{N_1 + N_2}}$$

where s' = the standard deviation of the population. t was computed to be 1.98; the means for the two samples are, therefore, significant at the 5 per cent level.

and was largely connected with the improvement of the Popondetta-Oro Bay road which passes by the village. In Sivepe both are of equal significance. While one girl was in permanent employment, she had assumed no major subsistence responsibilities, was single and, during the course of the survey, left the village to reside on the mission station adjacent to her place of work.

In each case several cash crops are grown, all of them tree crops. To some little attention is given (e.g. coffee in Inonda) while to others effort is restricted essentially to harvesting and the subsequent processing and marketing of the harvested product (e.g. coffee and rubber in Sivepe, coconuts in Inonda). Further

three elements of change, first, a trend towards the amalgamation of hamlets into larger units which assume the formal layout now characteristic of Sivepe, second, considerable mobility of settlements, and third, a high degree of individual mobility. However, the first and second he considers to be largely a function of Administration pressures and of ill-defined aims to improve the economic base of their livelihood (as is characteristic of Sivepe's intended move), and the third to be related to the 'vicissitudes of social relationships' rather than to any connection between settlement and garden sites. 361 178 166

The changes which have taken place in the range and relative importance of subsistence crops largely reflect the need to find a more reliable and adequate food supply during the dry season, although the tendency to increase the acreages of both yams and Xanthosoma at the expense of sweet potato and taro might also reflect a conscious effort by some to economise on time and effort in the subsistence sector. 241 178

The survey of activity patterns reveals little variation within the samples in the relative importance of the subsistence and external sectors: even those most strongly oriented to cash cropping are concerned first with achieving subsistence. The two most active people in the Sivepe sample, Linton and Palminus, register an above average level of activity through the whole range of tasks, the manner in which they allocate their time being proportionately little different from that of the sample as a whole. This applies equally to the entrepreneur in Inonda, who spends over half his working week in productive subsistence activities. His entrepreneurial activities are directed primarily towards a trade store which is not particularly demanding in terms of his time. In this respect his cash-producing preferences parallel those of other men where contract or casual work is preferred since, in the absence of strict schedules, it conflicts little with the requirements of the subsistence routine. 433 184 [461]

There is little difference between attitudes toward cash and toward subsistence crops. In particular the attention given to the commercial trees parallels that given to coconuts, areca, breadfruit and other economic trees associated with the subsistence sector in that, apart from planting and harvesting, maintenance is essentially restricted to facilitating access. The absence of any specialised techniques of arboriculture is carried over from subsistence to cash crop trees, the only distinction being that the cash crops are planted in formal stands. The work routine is much the same in that sustained and regular effort is neither required or given and the duration and intensity of individual periods of cash cropping work differ little from that for productive subsistence work. 245 [241]

249 476 While efforts have been and continue to be made to organise communal cash cropping, based initially on the expatriate assumption that voluntary co-operative effort is a feature of the culture and an instrument for increasing productivity, they largely fail. Although the communal rubber planting in Sivepe continues to be worked, this is not a reflection of good management but rather of the intrinsic hardiness of a tree which has been planted in its natural habitat, the forest, and is subject to the depredations of few diseases or pests. In Sivepe, work groups in cash cropping are no larger than in subsistence, although in Inonda they are substantially bigger, perhaps on account of the influential role of the entrepreneur. The point remains that work groups incorporating individuals other than members of an individual's families of procreation and orientation are not typical of subsistence production in this area, with the exception of those activities which physically require the participation of a large number of people as, for instance, sago-making.

461 184

433 184 166 464 In both communities the choice appears to lie between subsistence production plus peripheral commercial activities on the one hand and migration out in search of full-time employment on the other. In Sivepe the latter course is frequently taken, not only by single men, but also by some with dependents, who remain in the village in the care of parents. With 37.8 per cent of the potential adult male labour force absent and a number of dependents staying behind, a considerable burden is placed on the remaining residents in Sivepe. Only 25 per cent are absent at Inonda and no dependents have been left in the village. Although the distinction is not manifested directly in the length of the activity week in the two villages, it probably accounts for the greater incidence of temporary absences recorded in the latter - 17 per cent of total available labour time compared with 6 per cent in Sivepe - in that the slightly higher proportion of adult males to total population makes the subsistence economy less restrictive on individual mobility.

433 While activity patterns suggest that cash-producing activities are added to the subsistence pattern with little apparent stress, the question does arise as to whether <u>given the existing technology, socio-economic matrix and level of productivity</u> the communities have already expanded their commercial activities to the optimum level. There is no evidence that the expansion of cash cropping and paid work has resulted in any commensurate contraction in the time devoted to non-productive activities. The data confirm Fisk's general hypothesis (1962) concerning the availability of surplus labour. Although the Orokaiva are, by any objective standards, a reasonably active people who spend little time on informal social and ceremonial activities associated with the subsistence sector, and although, perforce, activity is restricted essentially to the daylight hours, there are some 6 hours per man-day remaining apparently unutilised. At present this time is distributed between resting, eating meals and informal socialising within the village.

Chapter 12

The two villages compared

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(a) The form and content of exchanges

The data on exchanges are of a less comprehensive nature than those dealing with activity patterns. Hospitality, 'a cardinal virtue with the Orokaiva' (Williams 1930:37), has been disregarded as has a range of minor transactions, such as the loan of tools, temporary care of children, the casual movement of the lime gourd from hand to hand and much of the sharing of areca at informal gatherings. However, such exchanges replicate those of the more important goods and services dealt with, in terms of both their form and function.

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There are only minor differences identifiable in the basic characteristics of exchange in the two villages. Each manifests a demand for cash that greatly exceeds the returns obtained from cash cropping, with the latter only one of several important sources of income. Nevertheless, the juxtaposition of monetary and non-monetary exchanges largely conforms to traditional concepts of morality where the principle of reciprocity operates within the 'sympathy group' and monetary transactions are effected, almost exclusively, with indigenes lying outside this group and with institutions located in the external sector of the economy. Thus a precarious, and probably only temporary, compromise has been achieved in which group solidarity and individual commercial aspirations each operate within socially and geographically identifiable contexts. The decision of the senior member of the largest Jegase lineage to 'market' pigmeat among villagers, and Linton's own dilemmas in the matter clearly demonstrate the vulnerability of the Orokaiva ideal of reciprocity in the face of progressive commercialisation of their economy.

However, to make a strict division between monetary and non-monetary exchanges can be misleading for, not only do specific goods and services marginally overlap the two categories, but many of the latter exchanges are not unlike the former in character. The principle of reciprocity underlies them all, although the system does not require that like be exchanged for like, and one type of goods is often reciprocated by another or goods by

service. In Sivepe sustained reciprocal exchanges operate primarily among members of an extended family and secondarily within a single generation (as between cross-cousins or ego and his wife's brother). In the first a significant degree of economic inter-dependence is apparent, while in the second exchanges serve to support alliances which may be both social and economic in character. Because of the continuing nature of the relationship no final settlement occurs and reciprocation is, therefore, frequently delayed. Elsewhere major exchanges are more typically characterised by immediate reciprocation, particularly where the obligation is a specific one relating to particular goods or service. In consequence only the casual exchanges, which themselves comprise but a small proportion of the total quantity of goods and services transacted, can be judged a drain on resources in the sense that they might serve to inhibit individual aggrandisement.[1] Furthermore, in most instances, the proportion of total production exchanged is so slight that the system cannot be considered to function as a major limitation on productivity. Even where the proportion is high, as with pigs or sago, there is normally immediate reciprocation to an equivalent, and often negotiated, value. In effect, therefore, it is less the goods than the relationship which determines the type of exchange adopted and according to the available evidence, this applies regardless of the extent of individual involvement in the monetary economy.

With the exception of labour services the mean volume of transactions per man-week in all categories in Inonda is about twice the level of that in Sivepe (see Table 12:1). However, the area over which most of them operate is much the same; at Inonda, 87 per cent of the acquisitions and 89 per cent of the disposals of subsistence produce are effected within a radius of two miles of the village, compared with 91 per cent and 81 per cent respectively at Sivepe. This difference of scale is largely explicable in terms of the greater socio-economic diversity of the Inonda neighbourhood and, related to this, the fact that virtually all the village's cash income is locally derived whereas at Sivepe a major source is remittances from kin, with whom there is little direct contact.

At Inonda a more restricted range of subsistence produce is available; with the exception of sago, there is a scarcity of staple foods suitable for consumption during the dry season. At the same time there is an abundance of fish and game within the group territory. Within a short distance of the village live ex-servicemen settlers (some of whom are kinsmen) and plantation labourers, while access to the wage earners in Popondetta is facilitated through the market there. The limited number of Inonda people in the permanent

[1] See pp.181-2.

[TEXT CONTINUED ON PAGE 281]

Table 12:1

Sivepe and Inonda: the volume of transactions per man-week compared

Item	Acquired		Disposed	
	Total	Mean (per man-week)	Total	Mean (per man-week)
Sivepe				
Subsistence produce (lbs)	11,553.00	17.10	15,091.00	22.30
Cash crops ($)	-	-	71.60	0.11
Labour services (hrs)	1,170.00	1.70	1,108.00	1.60
Storebought goods ($)	314.16	0.46	25.43	0.04
Cash ($)	273.72	0.40	239.20	0.35
Inonda				
Subsistence produce (lbs)	14,032.00	35.30	14,088.00	35.40
Cash crops ($)	-	-	2.32	0.01
Labour services (hrs)	631.20	1.60	439.90	1.10
Storebought goods ($)	373.04	0.94	41.08	0.10
Cash ($)	337.36	0.85	340.70	0.86

Total man-weeks: Sivepe - 677.3
Inonda - 397.4

wage-labour force may be related to this local diversity, and the fact that it is readily exploited through the medium of exchange, both monetary and non-monetary. Compared with their Sivepe counterparts, the Inonda people dispose of twice the volume of subsistence produce through the monetary sector, with sales of fish and game in Popondetta predominating. With settlers a wide range of subsistence produce is exchanged, labour services are rendered and cash payments received, while wage earners, whose involvement in the cash economy is greater than that of the settlers, serve as important sources of storebought goods and cash, which may be reciprocated with subsistence produce.

At Sivepe there appears to be less incentive to develop exchange relationships outside the village context. Apart from lime and fish there is little subsistence produce not readily available locally. The demand for produce at Saiho market is limited, while the prices obtained discourage regular selling. The few wage earners residing in the neighbourhood have small incomes and invariably maintain their own gardens. Consequently they control few goods not directly available to the villagers themselves from their own resources.

8: Waddell & Krinks E-4,5 (1964-1965) 1968 OJ23 Orokaiva OJ23

Per capita, the Inonda people handle more than twice the amount of cash and storebought goods as do those in Sivepe. Furthermore, there are important differences in their respective income and expenditure patterns. In Inonda cash is derived from a wide range of activities, among which cash cropping is only of minor importance. Contracting and sales to the Administration provide the single most important source, accounting for almost one-fifth of total income. In Sivepe almost two-thirds (60 per cent) is derived from cash cropping and remittances. In both villages, but more particularly in Inonda, cash is acquired on a very irregular basis. Even with coffee, for which there is a defined buying season of about seven months, there are seldom more than three or four opportunities to sell and the villager has no way of predicting when these will occur. This, perhaps more than actual size of income, is a major determinant of expenditure patterns, making both budgeting and capital accumulation hazardous.

At Inonda, with its higher per capita income and fewer formal demands placed on it,[1] more is spent in trade stores than at Sivepe, yet this expenditure is distributed over a similar range of commodities. In both cases foodstuffs and stimulants account for almost two-thirds, with the balance being spent on a wide range of cheap clothing, household goods and tools. Little of this expenditure is of a 'luxury' nature for, among foodstuffs, flour in Inonda and rice in Sivepe are purchased either wholly or largely during the dry season to supplement the shortage of subsistence foods, tinned fish and meat serve partially to compensate for a general inadequacy of protein in the diet while, among other goods, cartridges, torches and batteries in Sivepe are purchased to improve the efficiency of hunting.

The excess of income over expenditure in Sivepe is also higher than in Inonda, as is the amount of investment in shares and bank deposits, suggesting that the larger incomes at Inonda are associated with a more rapid turn-over of cash. Even the entrepreneur there, who accounted for almost half (43 per cent) of his village's total income, registered a net credit at the end of the survey of only $5.02 on his household's cash balance. Only he, among all the villagers in the two samples, purchased a major item of capital equipment during the survey - a shotgun costing almost $50. This followed a cash payment of $42, for organising the construction of the researcher's house, rather than an extended period of saving from income.

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[1] The villagers did not contribute to the Papuan Church Fund during 1964, an item which accounts for 10 per cent of total expenditure in Sivepe and exceeds LGC tax payments in importance.

new crops and techniques of production; and which is best adapted to the emerging patterns of social and work organization. It is also hoped to obtain information on the factors which influence the peoples' preferences for one or another of the systems of land-tenure and work organization.

It is appreciated that no two human groups are strictly comparable, and that there are cultural, geographical and economic differences between different parts of the Orokaiva area. On the other hand, there is a sufficient degree of homogeneity to allow some useful comparisons to be made between those who follow each of the various "roads" to economic change.

This paper contains the results of the first study undertaken. It was carried out in the Higaturu Local Government Council area at the village of Inonda, which is one of the small, widely dispersed Orokaiva villages which are typical of the flat eastern portion of the area. A second study within the Council area has recently been completed at the village of Sivepe, which is cooler, more hilly and more fertile than Inonda, and typifies the larger, more populous villages of the closely settled western area.(1) The results of research in other parts of the Orokaiva area will be published in the coming months.

We wish to record our gratitude to the people of Inonda for their generous co-operation, to Mr. Cromwell Burau for interpreting not only the language but also the culture of the Orokaiva people for us, to officers of the departments of Native Affairs and Agriculture for advice and assistance, and to Dr. D.G. Bettison and Mr. M. Rimoldi for assistance in revision of the final draft. We also gratefully acknowledge the assistance of the Rural Credits Development Fund of the Reserve Bank of Australia.

(1) Population density in the Saiho census division (which includes Sivepe) is 72.9 persons per square mile, which is the highest for the Higaturu Council area. Density in the Buna census division (which includes Inonda) is 7.7 persons per square mile, which is the lowest in the Council area.

241 it reverted to the Crown, C, as grandson of the main original
423 vendor, regarded himself as having a right in the abandoned pro-
472 perty. After some years of negotiating he now has a ninety-nine
[427] year lease at an annual rental of $7.95. Here he has planted cocoa and coconut trees.

At any time during his twenty years' employment D could have returned to his home area and planted cash crops on the ample family lands there. It was only when the opportunity arose of a
[654] resettlement block with a development loan of $1,500 that he
[426] decided to undertake cash-cropping; he has now planted over 3,000 cocoa trees.

472 Few Orokaiva are short of land in the area east of Popondetta
423 where the entrepreneurs are located. Land availability is not a factor differentiating entrepreneurs from villagers, but the availability of land other than that held under customary tenure may well be.

241 The entrepreneurs appear to be more efficient food gardeners
472 than many Orokaiva, for even though they average less time garden-
184 ing (see Table 6)[A] they have more extensive gardens, as shown in the following table.

Table 1

Area of land under cultivation for food gardens
(acres)

	Per head of population	Per able-bodied person over 16	Per household
A's hamlet*	-	-	1.45
B's household	1.20	1.20	3.61
C's household	0.67	2.36	4.72
D's household**	0.75	1.50	3.00
Average	0.65	1.26	3.19
Average for Inonda and Sivepe***	0.34	0.69	1.48

* Measured for the six household heads in A's hamlet in December 1965 at the end of a long drought. They estimated their normal garden area to be nearly double this. A lives in a hamlet com-
[592] prising himself, his brothers and some of his married children. The hamlet is a short distance from the village of Kapurahambo.

** Estimated, not measured.

*** From Crocombe and Hogbin 1963b:10, and Rimoldi 1966:19. Inonda is a village on the sparsely settled plain, Sivepe village is
[361] located in the more fertile hilly country where population is denser. They were chosen as apparently representative of the two major ecological zones inhabited by the Orokaiva. All four entrepreneurs live in the former, plain zone.

A. [Table 6 appears in Category 461, p.19--Analyst]

472 493 494 income derived from cash-cropping and trading. Prestige may be an even more important motivation to the acquisition of vehicles than it is with trade stores.

435 Other property

472 471 422 184 As shown in Table 3 the entrepreneurs have tools to the average replacement value of $30 and equipment associated with their cash-cropping to an average replacement value of $180 - an average of $210 per man. By comparison Orokaiva people of Inonda village had only about $13 and Sivepe village about $18 worth of tools and equipment per household.[1]

472 422 435 The entrepreneurs all had a range of consumers durable goods far beyond that found in villages. A and B owned bicycles worth about $50 each, A and D each had a radio which cost $60 and $47 respectively, and A and D also each owned wood-burning stoves costing about $70 each. The wife of C had a sewing machine which cost $70 (not listed in the table of tools and equipment as it is used only for domestic purposes). All had kerosene lamps and three of the four had clocks or watches. The average replacement value of the above items was in the region of $125 per man. It is estimated that possessions of this kind in Orokaiva villages in which we worked would average about $10 per householder.

472 342 (184) [422] The houses of the entrepreneurs are all somewhat larger than the average village house, and for many years B maintained two homes - one in his coffee garden and one in the cocoa garden. D's home is much more elaborate than the others and contains crockery, cutlery and kitchen utensils worth over $50 as well as beds, chairs, tables and curtains which are almost never found among villagers.

472 471 435 A has a modern cocoa fermentary worth $500, B has a coffee drying store and trays, estimated worth $80, and C a copra drier worth about $100.

472 231 184 By comparison with other Orokaiva people the entrepreneurs have few livestock, at least partly because they damage the root systems of the coffee and cocoa trees. A, B and C had none at all and D kept thirteen fowls from which he hopes to breed for commercial egg and poultry production. Householders at Inonda and Sivepe, by contrast, kept an average of two pigs and two to three fowls each.

472 [134] [154] At the request of the entrepreneurs, details of their individual holdings of cash are not included in this paper and can only be made available to researchers or to others with the permission of the entrepreneurs. All four have savings accounts, the average

[TEXT CONTINUED ON PAGE 16]

[1] Crocombe and Hogbin 1963b:44-5, Rimoldi 1966:25. Other comparisons in this section are drawn from the same sources.

balance in December 1965 being close to $300. The value of savings certificates averaged $10, shares in Orokaiva Coffee Growers' Society and Gona Co-operative Society $10, shares in Oro Ltd $85 and cash in hand $42, giving an average total of all liquid assets of $447.[1] In both cash and other liquid assets A, B and C were much better off than D, though D's consumption level appeared to be very much higher because of his government development loan.

A, C and D have no traditional valuables (hambo and di) though in each case their brothers do have. B had $87 worth in May 1963.[2] The averages for Inonda and Sivepe villages, by comparison, were $18 and $11 per man. Whereas Inonda people acquired most of their valuables by inheritance or in traditional exchanges, B acquired almost all of his for cash.[3] In his young days he bought some when visiting distant places but most of them have been acquired when people appeal to him at tax collection time (tax is $4 per year) or when they need cash for other urgent necessities. The visitor presents him with a valuable and asks for 'help' in the form of its cash value. Most persons requesting this help have been distant maternal kin, but some are friends with whom he had trading or work connections in earlier years. The fact that none come from his own village is said to be because neighbours or close relatives would be ashamed to ask for money in this way. The other three entrepreneurs say they decline requests of this kind.

Income

An attempt to assess annual expenditure was abandoned. It is difficult enough to assess income which comes in relatively large amounts from limited sources and at long intervals and for which some records are available as a check. Expenditure, on the other hand, is in much smaller amounts, for a much wider range of commodities and for which almost no documentary evidence is available.

An assessment of income is given in Table 4.

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[1] Cash savings of Inonda and Sivepe village householders, on the other hand, averaged $24 and $21 respectively.

[2] For method of valuing hambo and di, see Crocombe and Hogbin 1963b:97.

[3] We have heard of recent examples of sale within villages elsewhere in the Orokaiva area.

Table 4

Estimated annual income of entrepreneurs ($)*
(excluding interest on savings)

	A (1965)	B (1963)	C (Average 1963-65)	D (1965)	Household average Inonda and Sivepo** (1962-63)
Sales: coffee	320	286	-	-	3
cocoa	175	***	***	50	-
copra	-	-	244	-	-
rubber	-	-	-	-	2
vegetable	-	16	-	20)	4
hunted meat	-	64	-	-)	
Gross store profits#	91	50	199	42	-
Compensation##	-	35	-	-	6
Government loan###	-	-	-	140	-
Paid labour	-	-	-	-	23
Gifts, etc.	-	-	-	-	11
	586	451	443	252	49

* In many cases these figures are estimates only.
** Crocombe and Hogbin 1963b:53, and Rimoldi 1966:78.
*** Not yet bearing
# Assessed at 10 per cent of turnover.
Paid by government for coffee trees cut to widen road.
Under a government resettlement scheme.

Table 5

Estimated value of assets in 1965 ($)*
(not including land, domestic houses or cash savings)

	A	B	C	D	Total	Average	Village householders**
Coffee, cocoa and coconut trees***	3,440	1,320	400	1,740	6,900	1,725	80 (est.)
Buildings#	500	80	100	-	680	170	-
Tools and equipment	252	221	79	287	839	210	15
Consumers durables	240	55	75	132	502	125	10 (est.)
Livestock##	-	-	-	26	26	6	24
Traditional valuables	-	87	-	-	87	22	14
	4,432	1,763	654	2,185	9,034	2,258	123

* This table is based on a series of assumptions, many of indeterminable accuracy. It should therefore be regarded as indicative of trends rather than as a precise record.
** For Inonda and Sivepo householders from Crocombe and Hogbin 1963b and Rimoldi 1966. The average per householder for each village have been added and divided by two.
*** Based on valuations for the entrepreneurs kindly supplied by the Chief Valuer, Lands Department (Mr D.D. Balfour-Ogilvy). Value for the village trees was estimated by the writer, on similar criteria.
# Including only those buildings used in production (a cocoa fermentary, coffee drying trays and store, and a copra drier respectively). Domestic houses were in all cases built mainly of local materials.
Pigs assessed at $10, fowls at $2 each.

Work patterns

Records of time spent in various tasks was kept by A for ten weeks, and by B and C for twenty weeks.[1] The results are summarised in Table 6. Records were also maintained for their families and these plus those for the entrepreneurs themselves are summarised in Table 7.

These tables show some marked differences between the work patterns of the entrepreneurs and those of villagers. The entrepreneurs spend less time on subsistence gardening than the villagers spend (5.7 as against 11.5 hours respectively), much less time in wage employment than villagers (nil as against 6.9), more than twenty times more in cash-cropping and trading (19.5 compared with 0.7), only a fraction of the time acquitting traditional social obligations (1.0 as against 8.7) but considerably more in community activities as officers of co-operatives, local government, church bodies and other public agencies (7.6 as against 0.5). The same trends are apparent, though not so marked in degree, where the entrepreneurs' families are included (Table 7).

Time spent on social obligations is kept to a bare minimum. This is facilitated to some extent by the fact that all the entrepreneurs live out of sight of the village houses. Non-conformity would be more difficult if they were living right in the village. During the twenty weeks' survey of B's family, for example, they took only one day off for each of two deaths in the village. Had they lived in the village they would have been involved for many days. In another instance which occurred before this study began, a classificatory brother of B's wife died in Inonda, just over the river from where he was living on his coffee block. After two days' brief formal participation in the mourning he removed to his Hohota house and worked on his cocoa there. Two days after the three weeks' mourning period at Inonda finished he returned to live at the coffee block. Had he remained at the coffee block during the mourning he could hardly have continued to work full-time on his cash crops. The Inonda villagers, by contrast, left cash-cropping entirely during this period.

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[1] The periods recorded were: A and his family ten weeks from 14 June to 23 August 1963; for B, twenty weeks from 1 September 1962 to 18 January 1963 and for C, five and a half weeks from 22 December 1965 to 29 January 1966. No records were made of D's work patterns. Watches and forms for recording work patterns were issued to A's eldest son, B's son and to C. For the first week either the writer, Mr Hogbin or Mr Burau lived with the people maintaining the records, but the period of our residence is not included above. One of us or Mr Eupu made visits to collect the records and discuss problems every few days.

Table 6

Average hours spent per week in various tasks - men only
(not including domestic and leisure)

	Entrepreneurs				Villagers		
	A	B	C	Average	Inonda*	Sivepe**	Average
Traditional production							
Subsistence	2.8	7.3	7.0	5.7	9.6	13.5	11.5
Hunting, fishing, foraging	0.3	4.7	3.1	2.7	4.3	1.3	2.8
Building	-	1.2	4.0***	1.7	0.1	2.7	1.4
	3.1	13.2	14.1	10.1	14.0	17.5	15.7
Production for cash							
Paid work	-	-	-	-	11.3	2.6	6.9
Cash-cropping and store	25.1	19.3	14.0	19.5	0.7	0.8	0.7
	25.1	19.3	14.0	19.5	12.0	3.4	7.7
Non-economic activity (other than domestic and leisure)							
Social obligations	0.3	0.7	2.0	1.0	12.5	4.9	8.7
Travel	-	3.7	1.0	1.6	2.8	4.1	3.4
Sickness	1.7	1.4	5.0	2.7	2.6	1.0	1.8
Council, etc.	0.5	10.7	-	3.7	0.6	0.4	0.5
Church	-	3.2	8.5	3.9			
	2.5	19.7	16.5	12.9	18.5	10.4	14.4
Total	30.7	52.2	44.6	42.5	44.5	31.3	37.9

* From Crocombe and Hogbin 1963b:63.
** From Rimoldi 1966:28.
*** C built a new house during this period.

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Table 7

Average hours spent per week in various tasks - all adults
(not including domestic and leisure)

	Entrepreneurs and families*				Villagers		
	A	B	C	Average	Inonda	Sivepe	Average
Traditional production							
Subsistence**	9.0	13.0	8.3	10.1	11.7	14.4	13.1
Hunting, fishing, foraging	1.6	5.0	1.6	2.7	2.8	1.2	2.0
Building	0.4	0.9	1.3	0.9	0.1	1.6	0.8
	11.0	18.9	11.2	13.7	14.6	17.2	15.9
Production for cash							
Paid work	-	-	3.6	1.2	5.7	1.3	3.5
Cash-cropping	9.7	21.9	4.5	12.0	0.8	0.5	0.6
	9.7	21.9	8.1	13.2	6.5	1.8	4.1
Non-economic activity (other than domestic and leisure)							
Social obligations	2.6	0.7	1.0	1.4	16.2	4.4	10.3
Travel	0.7	3.3	0.3	1.4	2.9	3.3	3.1
Sickness	4.0	1.1	2.8	2.6	2.9	2.5	2.7
Council work, etc.	1.4	4.1	-	1.9	) 0.3	0.9	0.6
Church	3.2	3.0	3.6	3.3	)		
	11.9	12.2	7.7	10.6	22.3	11.1	16.7
Total	32.6	53.0	27.0	37.5	43.4	30.1	36.7

* For A this included his two resident sons and their wives, two brothers and their wives. For B it included his wife and his brother and for C his wife and his adolescent daughter.

** B and his family averaged 17 hours weekly on food gardening, but 4 hours of this has been transferred to cash-cropping as he markets surplus vegetables in Popondetta. Most of the food gardening is done by his wife (26.8 hours weekly) and brother (16.9 hours).

461 be acquired without too much hard labour or threat to status, and only
436 if its acquisition does not involve foregoing other more highly valued
437 benefits. Thus, the market has a great elasticity of supply: when
435 the price seems right to the Orokaiva, supply suddenly emerges from all directions; when the price is lowered, there is suddenly no supply at all. The investment of effort is at once directed into different avenues: subsistence gardening, house-building, a project for the mission, or a hall for the women's club, or a hunting expedition, or practises for a dance.

177 Comparison with Inonda: In this section I have discussed a small
184 number of acculturation variables as they apply to Sivepe. In general they apply to Inonda also, but there are a few minor differences to be mentioned. The most important of these is that whereas one can speak, in Sivepe, about a certain stage in acculturation reached by the community, it is less easy to do the same for Inonda where, at one end of the scale, we find fairly young men without cash-cropping skills, without school education, and almost entirely aloof from the money economy, while at the other end, one man has become a government driver and would need to be considered, in every respect, as more acculturated than any man of the same age group at Sivepe. It would be wrong to suggest, however, that acculturation in Sivepe was homogeneous; nor that the conservatism of part of Inonda is necessarily a long-term phenomenon.

There is no difference in food habits between the two villages, except that the government driver, having more money, eats better. In respect to clothing, it seemed that in Sivepe young women are a little more prone to cover their breasts than in Inonda; this is of course very much a matter of fashion and can change in months. With regard to housing, changes were actually occurring during the year I was in the field. Houses were being enlarged up to approximately the Sivepe size, and this programme was explained to me as due to the forthcoming feast at which the Seva people were invited and the new floor space was needed to accommodate them. The argument was thus not quite the same as at Sivepe, where the larger houses were thought of as a necessary part of "iji eha," the new age. "Timber" was not used in Inonda, all the walls being of sago. The "timber" fashion never travelled as far East as Inonda; I doubt whether Inonda had enough suitable trees and, furthermore, Inonda did not have the same shortage of sago. Though sago was rare on Inonda lands, the residents had a plentiful supply from other lands belonging to relatives. At Inonda, only some of the people used rubbish holes, whereas the others threw their refuse into the bush. On the other hand, the village was most plentifully and attractively laid out with shrubs and ornamental plants. Inonda, built a special feast house for their visitors from Seva, whereas Sivepe did not do so for their visitors from Togahou. This definitely reflected a non-traditional attitude in Sivepe.

177 In the attitude to money, and to education, Inonda was clearly
436 split between the traditionalist and the modern faction. The modern
583 faction was, in fact more money-oriented than were the Sivepe people.

177 The clearest example of this was in the computation of bride price.
436 As I mentioned, the Sivepe people, in calculating the value of bride
583 price, translated all gifts of trade goods (clothes, kitchen utensils, etc.) into money terms, speaking of a bride price of 72 pounds when the actual cash component was only $28. (The word "dollar" is well-known to Orokaiva but as yet imperfectly accepted in discourse as a unit of value.) Inonda, however, in calculating the value of bride price, went further and converted also the pigs, valuables and tapa cloths into money terms, as was described in Hogbin, 1966. Upon inquiring specifically whether the Inonda people calculated bride-wealth in this way, I found that Hogbin's presentation corresponded with the Inonda method of estimating. In other words, Inonda people spoke of a 100-pound brideprice, when the actual gifts were as follows:

Cash	$ 80.00
Household goods	13.00
Pig	60.00
Bark-cloth	9.75
Food	10.60
Traditional valuables	28.20
Total	$201.55

Sivepe people expressed some horror at the thought that this should be referred to as a $200 bride price; to them the gifts of pig, bark-cloth, food and traditional valuables were gifts of a special type that could not be equated with money. I asked one informant whether this was perhaps a modern trend; "not modern but silly," he replied.

177 This reply reminds us how hazardous it is to place a number of
184 phenomena, found in different villages, on a unilinear kind of acculturation continuum. Nonetheless, I believe that the facts show some tendency for Sivepe to be more "acculturated" than Inonda, even though the differences are slight, and apply only to part of the Inonda population.

Section 12: Impact of External Influences on Community Organisation

184 One of the difficulties of our research design is that Sivepe
621 and Inonda are of different population size, Sivepe having exactly three times the population of Inonda (135: 45). Hence, the community organisation of the two villages would naturally differ for that
[614] reason alone. A second difference lies in the clan composition of the two villages and the changes in clan composition over the period under consideration. Pamba contained three clans: Seho, Jegase and Timumu and modern Sivepe still contains roughly the same family alignment except that the members of the Timumu clan are now calling themselves

184 Jegase, thus making Sivepe basically into a two-clan village, into
621 which some recent Garoubi immigrants remain to be integrated. Inonda,
614 in 1951, consisted of 13 houses of which nine were inhabited by Andiriha, three by Jego-undi and one bachelor's house. In 1966, there were only seven houses, only one of which was occupied by Jego-undi. Hence, Inonda has almost ceased to be a two-clan village today.

571 I have written at length about modern Orokaiva leadership elsewhere (Schwimmer, 1967) and shall do little more here than summarise the conclusions already published. The scope and range of Orokaiva leadership has always been small, except for the heads of extended families (okose) who had a very wide scope of authority. Each village had a set of experts who had unquestioned authority in their sphere of expertise. Examples are the medicine man, the hunting expert, dancing expert and some others. One of these experts, the feasting [554] expert, is in fact the man of highest status in the clan or village [622] and may be called its leader. A clan leader may take responsibility [614] for such corporate actions as a modern clan performs, e.g., raise bride price for one of its members. Except in these circumscribed situations, he is esteemed and respected rather than obeyed. The village leader, in a multi-clan village, is usually the leader of the largest clan. In dealings with other villages, he is the man to whom most respect must be paid; it is here, and when acting as a feasting leader, that he most closely approaches the role of power-bearer. Even so, the Orokaiva word for "feasting leader" is pondo kiari embo, i.e., feasting expert, and in explanation of his role informants always stress that it is based on expertise rather than on a more diffuse concept of status. I also found, after inquiring in Inonda, Hohorita and seven villages in the Sasembata district, that in fact the fathers of all these feasting leaders had occupied the same positions. Nonetheless, informants always denied that the office was inherited; rather, the fact of succession was explained by the transmission of the necessary knowledge from father to son.

621 Australian domination added at once the role of village constable
622 to this somewhat acephalous pattern. One gathers from Monckton that
625 the village constable was chosen on the assumption that he had been
614 the traditional leader. How often that assumption was justified I do not know. In Inonda, he certainly was the Andiriha clan leader. In Sivepe, the situation was more complex. Until about 1939, Sivepe had no village constable of its own, but an Awala man was village constable for a wide area centred on Awala and including Sivepe. The first and only Sivepe village constable was a man now baptised under the name of Samuel but then called Jovareka. Jovareka appeared as witness to prove the innocence of two Sivepe men (from the Seho clan) who had been accused of murdering a small boy from Awala. He showed successfully that the village constable had trumped up a charge against the two Sivepe men and the government appointed Jovareka village constable in his place. Later, Jovareka's area was reduced to a more

794 organised contact. After each Sunday service, a meeting of the church council is held at the church, presided over by the pastor, at which the needs of the parish are discussed. The pastor may also call [431] meetings during the week. No payment is ever made for work done for the church, but the pastor has on occasion made a small distribution of tobacco, at which the people were very pleased. Much of the burden falls on the member of the church council for each of the villages. [623] While the after-service meetings at the church are open to all church members, the council has its own meetings and the member for the village has an especially close relationship with the church. It is he who calls together the people in the morning when building work is to be done, or who makes other announcements, in the usual way by standing in front of his house in the evening and speaking in the dark, heard by everyone in the houses.

614 This man belongs to the plant emblem group baptised in the early 613 1950's, but interestingly enough he did not, like most of the early converts belong to the Jegase clan. Plant emblem groups (or lineages) 794 are not necessarily segments of a clan and in this case the sasaha plant emblem group includes a few Seho people, who were baptised with the rest of their lineage. It was one of these Seho men who was chosen as church councillor, the choice being reportedly made by the [224] pastor himself. Shortly before my arrival in Sivepa, this man was given the office of hunting expert. Previous to this, every clan had had its own hunting expert, but now this church council member was the only one. The task of the hunting expert is the performance of magic prior to a collective hunt, decision of the time and place and the privilege of being the first man who enters the bush, together with his wife, for hunting. "What kind of magic does Dunstan perform?" I inquired. He invites the pastor down to the village and the pastor blesses the guns and other appurtenances of the hunt, while the old magic is no longer performed. In the neighbouring village of Sasembata, I found that this innovation had not been adopted.

794 In Inonda, all religious organisation was in the hands of the transport driver and one-time councillor, who played the role of lay-● 184 preacher on Sundays, using as a chapel a building originally intended for the storage of coffee. Church was attended by the Christian half of the village but I saw no Christian activities apart from the weekly service. The mission teachers and the Anglican school were located at Hohota, three miles away from Inonda. Most of the modern organisation roles noted for Sivepa were, in fact, found at Inonda but every one of them was allocated to the same man, the transport driver. He acted as "committee;" he made the kind of speeches that were made in Sivepa by the councillor and the sanitary inspector (these functionaries very rarely came to Inonda); he was middleman for the mission; he was agricultural entrepreneur and his father was the feasting leader, leaving to him the day-to-day organisation of the feast given in June, 1967. The price for this far-reaching centralisation was a lack of participation in most of the activities by at least half the population, whereas participation was far more general at Sivepa.

its efforts upon what were then the Jegase and Timuni clans, to the exclusion of Seho. When my wife and I came to Sivepe, Jegase at once claimed us, built our house for us and was ready to perpetuate the familiar "special relationship" before I had a chance to assess the situation.

In terms of economic development, this extra experience of Jegase did not actually make much difference. Seho grew just as much coffee; the Seho clan leader was always in the vanguard for innovations such as the Malayan rubber trees; Seho had about as much money income as Jegase, except that Jegase received more cheques from town workers married to locally resident women. It must be remembered that the educational background of the Jegase men was still rather limited and insufficient to open up the more remunerative avenues of employment. The younger generation of Seho was just as well educated as the younger generation of Jegase; in fact, the only person to have reached Form II was a Seho boy whose father had no schooling but a few years' work experience before marriage.

Finally, the leader of the Seho clan (without schooling, but with brief experience in the A.P.C. before the eruption) made up in shrewdness what he lacked in facility. Europeans who had dealings with Sivepe over land and other issues found him a tough and calculating negotiator who knew as well as anyone how to safeguard the interests of his village and press for whatever blessings of the modern age might become available. As "committee" for Sivepe, he was a stern champion of village decorum. I have seen several other villages which vowed to eliminate pigs, but in these villages one could usually still find a very tiny piglet, so small you could hardly see it, which signified the hardiness of the old dispensation; in Sivepe, one only saw dead pigs. He would have no weeds, no houses out of alignment, no late noise; whatever the Australians chose to define as the spirit of progress, was strictly enforced by this leader.

The younger people are mostly going as far as they can (up to Standard 6) at Sasembata School; so far only one has gone further. One young man, who had finished Standard 6 and a young woman who had done Standard 4, but was intellectually brilliant were regarded in the village as the educated élite; both were just above 20 years of age. They were both from Jegase households; they both helped us considerably as interpreters. It is likely that the Sasembata school produced others as competent, but they would have left for jobs elsewhere.

I have already pointed out that in Inonda there was less homogeneity. One man was markedly more educated than anyone in Sivepe; nearly all had been away on paid employment for long periods (longer than at Sivepe). The educated leader, attracting to himself other men with some education, was able to act as a kind of entrepreneur and thus two different patterns of life became established, emphasised by the persisting neglect of cash-cropping by one section. Two young and vigorous men who might well have grown coffee prefer to depend for cash on temporary plantation jobs.

184 197 The difference in pattern between the two villages may well be explainable by the influence of the improved schooling and the close contact with the mission station found in Sivepe, in common with many of the other resettlement villages. These improved facilities may to some extent be regarded as social consequences of the eruption, as they were developed in the resettlement villages in the wake of resettlement to replace the earlier facilities at Sangara.

434 184 Money income has risen rapidly since the war. About the time of the eruption, six of the present inhabitants of Sivepe were away on jobs outside the village. Not only are far more Sivepe people absent today on wage work, but the village itself has a steady income. At the time of Rimoldi's study, his sample was said to have spent annually $410 while its income for 1962 totalled $328 or $28 per household. Today this has risen greatly; the 14 coffee gardens, with over 4,000 trees, produced some 6,000 pounds of coffee, worth in all about $1,000; gifts from absent wage-earners over the year totalled at least $500 and other income (paid work, sale of products, etc.) at least $200. This makes up a minimal total of $1,700 or an average of $60 per household. I would not be surprised if actual total income was as high as $2,000 but it is very hard to obtain reliable facts. There is no doubt, however, that the coffee gardens have made Sivepe substantially wealthier, while in Inonda only the government driver has substantially improved his position since 1962, when Inonda's average household income from paid work, produce and gifts was [465] 833 p.a. (Crocombe and Hogbin, p. 53). The government driver's regular salary of about $700 p.a. stands out in both villages.

124 was much less marked when I took him with me to Inonda. He was a
123 bachelor who had a penchant for courting girls he was, for some reason,
157 unable to marry. While we were in Sivepe, his girl friend, though
belonging to the Seho clan was rather too closely related to him on
her mother's side. Her father was Lawrence's elder brother and the
[582] Seho clan generally was strongly opposed to the union; they therefore
treated the affair as incestuous. The mission had wanted to send
Leon for training in hospital work. He had been doing some of this
at Sasembata, and it would have suited him. His father opposed the
idea, considering that his knowledge of English, etc. would be too
useful to lose. When I came, his calculation proved right, for Leon's
presence and employment drew me, for some months, into a position of
much dependence on that family. Leon was the only young man who did
not join in the drum dances, and who never sat with the other men.
Perhaps, his bachelor status partly explains this, but another bachelor
of the same age did not keep away to nearly the same extent.

177 One difference between Inonda and Sivepe was that in the former
184 place there was only one family through which adaptive ideas and
decisions were transmitted to the community, and in practise only one
man, whereas in Sivepe, there was a variety of influences: the Seho
leader, the two older, and in many ways totally different older Jegase
leaders, and several younger people each with their own fund of experience
which helped them to interpret a changing social situation. This
difference results not only from a different organisational pattern
(based respectively on the "big man" and the equality ideology) but
also from the mere difference of size. It may be argued that some at
least of the multitude of avenues through which the modern world was
made accessible to Sivepe was due to post-eruption measures in the
resettlement villages. Of the leaders discussed here, however, not a
single one (except the two young interpreters who were scarcely leaders)
[797] was educated in the post-eruption period. They may have been influenced
by their close association with the mission; if so, it is hard to say
to what extent this association explains their present attitudes. One
may safely say that the association with the mission at the present
time reinforces the change-directed ideology of Sivepe leadership.

astonishment about this kind of story, I was told in explanation that at the time of the eruption, the old people could not run away and the old people all died. For this reason, old customs and old knowledge died also; those who were left behind--the children who could run fast enough to escape--were forced to accept the new way of life as they knew no other.

This suggestion of an abrupt break in cultural tradition is of course in itself mythology. The continuity was obvious enough to the observer. Nonetheless, the belief in discontinuity was an important aspect of the modern Sangara self-group image. In the eruption, Sangara lost the people who used to make the decisions, who used to set patterns of behaviour. The survivors were forced to put the pieces together as best they could. Many customs vanished on the day of the eruption, e.g., polygyny; those customs which survive in Sivepe, however, mostly survived to some extent in Hohorita too. But when I asked my Hohorita informants whether father-in-law still chased his son-in-law with a firebrand this definitely appeared to be out of fashion. For traditional knowledge as well as custom, Sivepe was the repository of much that Hohorita had left behind. Almost all the mythology had been lost; the dancing was much inferior because the people were so much busier with their coffee; on the other hand, feasting ceremonial had remained mostly intact. Burial rites were no longer as Williams described them but very much the same as in Sivepe, i.e., the essentials were intact but a great deal of restraint had been introduced, the body was no longer dressed and laid out in the traditional manner and, most important of all, the widow was no longer expected to stay with the dead man after burial.

In matters of food, clothing, housing and village improvement, tools and skills I found most of the same features as in Sivepe. The differences I found were, to some extent, in the greater availability of money, in the larger number of educated people, the larger number of persons who had migrated to towns where they held skilled jobs, the intensive contact between this educated élite outside the village and the educated élite inside it, and as a result, as far greater awareness of ideological and political issues than could be found in Sivepe. Stephen, the government driver at Inonda, had a sophistication comparable to this educated group at Hohorita, but he was alone and exchanged ideas only when he was in Popondetta, away from the village where wider political and ideological ideas would have aroused little interest.

Section 4: Leadership in Hohorita

At the time of my arrival at Hohorita, the traditional leader, a man called Amos, had recently died. After his death, he was revered with much ceremony. Thus, during my stay, a naterari (Williams: 1930: 226) was set up, i.e., a post to taboo the coconuts and betelnuts

dance in Sasembata. But they enjoy very much better conditions than are usual for men who marry uxorilocally.

The mortality among the elderly at the time of the eruption was so great that many traditional customs and myths were lost among the Sangara with the elders who knew them. For instance, rituals carried on at birth in Sivepe are no longer practised in Hohorita. For the rest, I did not see many differences between the villages in level of acculturation. Housing conditions in Sivepe were better; money was more plentiful at Hohorita. Dances were far more carefully practised and more expertly performed at Sivepe. Clearly, the Hohorita people spent more time at their coffee; this was given as the reason for neglect in other matters. It may well be that cash-cropping above the level noted at Sivepe has necessary consequences of this sort unless technological changes occur. Ideologically, Hohorita is--as I demonstrated--more deeply involved with the concepts of the New Day than Sivepe.

Though no groups have left Hohorita since it was founded, the co-residence of these many clans does make for a certain instability. The leaders of the Oripa clan group told me that just after the eruption very few Oripa were left, but as the clan was becoming more numerous, it was beginning to think to establishing its own village. Besupa was harbouring similar thoughts. Both these clans were minority clans in their part of the village and this inevitably implied some subordination. In Sivepe, the fusion of Jegasa and Timumu had established a fairly equal balance with Seho, as both clan groups were about equal in strength if the greater resources of Seho are taken into account. In Hohorita, however, the supremacy of Horeopa (and Sehopa in the back section of the village) could hardly be challenged. The councillor and the government are opposed to such fission and overcapping organisations such as the credit union, the women's club, the church, the school, etc. may gradually set up a firm esprit de corps. The importance of tree-crops (as opposed to shifting cultivation) in the Hohorita economy might be a further disincentive to the migration of groups to another village, but Oripa has in mind a new village site which would actually be closer to their coffee gardens.

Section 6: Conclusion

In this study, we have found three complex forces, acting as causes of changes, to be intertwined: forces acting throughout Papua and New Guinea to promote socio-economic development, the effect of the relocation of certain communities near Mount Lamington after the eruption, and the physical and cognitive effects of the eruption itself. The last-mentioned of these forces was far more disastrous for Sangara than for the rest of the Northern District of Papua. In tracing the causes of culture change in Hohorita, we have to give especial emphasis

the assumption is that such events are read by a social group as constituting a sign or system of signs.[1]

Such an assumption is legitimate in the case of the eruption of Mount Lamington. In the view of the great majority of my Orokaiva informants, the cataclysmic explosions in the mountain and related volcanic activity were utterances communicating a message. With unimportant exceptions to which I shall refer later, informants took what may be called a religious view of the eruption (Lévi-Strauss 1962:292). They invested with personal will what we would call forces of nature (van der Leeuw 1938:chap. 9). And not only did some Being cause the eruption, but he used it as a means of communication.

Whether it is expedient to study a cataclysm such as the eruption of Mount Lamington as a system of signs emitted by the mountain depends entirely on the quality of the insights that emerge. In this case, field inquiry showed the existence of at least four systems of thought on the significance of the disaster. The adherents of these systems each expressed a different world view consistent with their view of the eruption. The existence of such ideological differences within a single society reflects conflicts which occur not only on the level of discourse but also on that of social transactions.

Such data raise several questions that merit close examination. If all Orokaiva had placed the eruption within one logically consistent framework of meaning, we might believe that we had thus discovered *the* cognitive system of the Orokaiva. In the present case we find four ideologies and explanatory frameworks all generated by the same cognitive system, in the same way that different players may use a variety of strategies while competing with one another in the same game. It then becomes our task to reconstruct this cognitive system and account for a system of interrelated ideologies generated by a sequence of events as interpreted by the cognitive system.

Another question is whether ideological discourse about the cause of the eruption deals with all or some or any of the basic conflicts identified in the society by ethnographic study and analysis. My data, dealing with the period 1951–1966, suggest that Orokaiva ideological discourse was rather selective in the conflicts with which it concerned itself. The conflicts between tribalism and regionalism and between denial and acceptance of the

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gara lived close to a large mission station which offered educational facilities until it was wiped out by the disaster. Afterward, the mission took a special interest in their welfare.

What distinguished the relocated villages from the others was not greater contact with European-dominated institutions. On the contrary, it would seem that contact with such institutions was probably most frequent among the male residents of Inonda, who were much engaged in wage labor; such contact was least frequent in Sivepe, with Hohorita holding an intermediate position. Nor could it be said that economic prosperity, in the sense of money income, was correlated with relocation. On the contrary, the average income was higher in Inonda than in Sivepe or Hohorita.

In summary, the major outcomes of the eruption and relocation have been the following: first, the administrative center Higaturu, situated on the mountain, was destroyed and replaced by Popondetta, which lies on the alluvial plain to the north, thus shifting the center of Australian influence away from the relocated villages. This detracted from rather than contributed to development of the relocation areas and placed the administrative center at some distance from the areas of greatest population density. However, the relocated villages were provided with subsidiary centers of Australian influence such as the hospital in Saiho and the mission stations at Sasembata, Isivita, Agenahambo, and Hohorita. In addition, a number of large villages (with populations of 250 to 500) came into being along the main road between Popondetta and Kokoda at a distance of 6 miles or more from the crater; these villages were made up of groups previously domiciled in small bush villages.

The government prefers these large villages because they make it possible to introduce such Western social institutions as schooling, water supplies, road construction, and health clinics more conveniently. The eruption offered the government a good opportunity to establish large villages. The population of the bush settlement had abandoned the area, and by the time the population was allowed to return, the villages were no longer habitable because of eruption damage and subsequent neglect. In this sense the eruption offered an opportunity for speeding up development programs. One might also argue that social development among the Sangara survivors was accelerated when the entire older genera-

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tion perished in the eruption and the survivors were therefore not fully instructed in traditional religious knowledge. Innovation proceeded without the resistance an older generation might have offered had it survived. I have argued elsewhere that this absence of the elders led to striking changes in the Sangara perception of the world (Schwimmer 1969:70–71).

If we compare relocated villages such as Hohorita and Sivepe with villages touched less by the disaster, such as Inonda on the alluvial plains, we notice that the former villages are larger, display more of the innovations advocated by the government, have a higher level of school education, and have responded more to government-sponsored schemes such as coffee growing. In my detailed report (Schwimmer 1969), I was inclined to ascribe such differences to the effect of close contact and guidance during the period immediately following the eruption, but such an explanation should be treated with caution.

The differences are probably due largely to ecological factors described in the report. Inonda land provides more animal foods; it is slightly closer to wage employment and markets; the climate is less suitable for cash crops than in Sivepe. The population, due to its sparseness, is relatively deficient in health and educational services. Hence the conditions for cooperation with government programs were less favorable than at Sivepe. Furthermore, the observed differences may also be due to historical factors. While coastal and foothill areas had been missionized and in contact with the administration for many years, the intervening Sauaha groups including Inonda were defeated and sustained heavy losses in the warfare of the early postcontact period. They subsequently remained aloof from white contacts. After the Japanese occupation, some of their men were hanged by the Australians for having acted as collaborators.[11] Hostile feelings are still an impediment to the acceptance of government and mission programs.

Such social consequences of the Mount Lamington eruption do not in themselves lead readily to illuminating anthropological generalizations. The actions of government and mission immediately after the eruption greatly relieved the distress of the population, but we cannot establish that these actions, directly and specifically, led to major social changes. One might therefore be inclined to view the eruption of Mount Lamington as lacking serious anthropological interest, yet such a view would greatly

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pointed by the administration to enforce regulations concerning law and order, works and amenities. They were not necessarily 'big men', customary feast-givers or, military commanders.[13] At Ilimo they at once became the leaders of all operations (food distribution, house building, visits to the home village), as these involved dealings with the Europeans in control of the rescue and supplies.

These organizational changes, individual fears, grief, anguish, and the increased dependence on village constables and white authorities were certainly reflected in the explanations given of the eruptions. But these explanations took account also of far broader cultural issues, in fact of the total postcontact experience common to the population of the Northern District.

The Orokaiva explanations of the disaster to be considered here certainly cannot be understood except in the context of the total Orokaiva cognitive system. Any Orokaiva explanation places the eruption within a logically consistent framework of meaning, but it is only one of several possible frameworks that might, successively or even simultaneously, be constructed out of the Orokaiva cognitive system. I propose, in the present section, to construct a model of the various systems of connotation and the relations between them. Systems of denotation are briefly referred to here but explored in more detail in the following section.

One obvious line of explanation of the eruption was to ascribe it to the anger of Sumbiripa. Many Orokaiva actually explained the disaster in this way at the time it happened, as may be seen from the evidence of Tomlin (1951), Benson (1955a, 1955b), and Schwimmer (1969:69ff.). The anger of Sumbiripa, as supposedly expressed in the eruption of Mount Lamington, was explained by Orokaiva by various disrespectful acts against the mountain. Grenades had been thrown near the crater during the war. Afterward, the Orokaiva began to acquire guns for hunting on the mountain. Such were the acts quoted to me in Hohorita and Sivepe as arousing Sumbiripa's anger. The eruption was regarded by informants as an unprecedented event. The question arose in the Orokaiva mind why such an event should occur just then, when it had never happened before. The anger of Sumbiripa had always been feared, but no sinister meaning had been attached to the rumblings and smoke signals, and, moreover, revenge had always been mediated through 'ghosts'. The new form of punishment could be explained

only with reference to a quite novel form of infringement of the taboo—a far more offensive infringement than had ever happened before. Just what made grenades and guns so offensive?

This question may be answered on several levels. The first of these is a purely ritual level. Of all the novel activities in which the Orokaiva engaged near the mountain, the ones that were singled out as significant stood out by making a sharp, loud, and dangerous noise. Now there are many ritual contexts where the Orokaiva use silence as a sign of respect and noise as a sign of disrespect. Hence the Orokaiva were ritually consistent when they told me it was the noise of the hunters' guns that angered Sumbiripa. But hunting rifles have a further symbolic significance that should be taken into account. I was told that game on the mountain was plentiful until the guns were introduced but that today hardly any game is left because the guns killed it all. In this instance the Orokaiva were giving a very reasonable explanation of a drop in game population which was probably real enough. In fact everybody uses guns today or wants to use them, as they are effective for hunting. But they are also sinister—that is, their effectiveness is known to be too great to allow the game population to survive.

The young men who took up the use of hunting rifles between the end of World War II and the time of the eruption were bold innovators and at the same time they were considered slightly wicked in abandoning traditional hunting methods. This is implied by informants who account for the eruption by the anger of Sumbiripa. They are thinking of the breakdown of the old order by the adoption of European innovations, Sumbiripa representing the potency of the old order. They argue that if only the young men had not started to use hunting rifles, the disaster would not have happened. The young men would never have dared to make such a din close to the crater if their respect for the spirits had not been undermined by newfangled doctrines.

The explanation of the disaster considered here resembles all other recorded explanations in one fundamental respect: it is not merely the application of a traditional rule to a new event but it generates a new rule, justifies the rule in the light of empirical evidence, and can be comprehended only in the framework of an ideology which in turn was generated by contemporary events. The starting point of all the explanations is the activity of white officials, missionaries, and traders among the Orokaiva and the

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innovations they have brought. Those who blame the eruption on the anger of Sumbiripa regard these innovations as potentially disastrous. They argue that the eruption has proved their point; it has fortified them in their ideology. Furthermore, they have established the rule that people should not shoot on the mountain. Before the eruption this was not, to my knowledge, clearly formulated as a ritual prohibition. Today it is clearly stated though generally disregarded for reasons we shall soon learn. In justification of the rule, it should be noted that it is supported by some very cogent evidence from Sivepe villagers. It is a fact that while the eruption killed nearly all the Sangara it killed very few people of Isivita and the Sasembata districts, even though they live equally close to the crater. It is also a fact that while the Sangara had many hunting rifles in the late 1940s, the Isivita and the Sasembata districts then had few or none. I was told that Sumbiripa gave two signs just before the eruption. To the Isivita people and those of Sasembata district he made a sign of blue fire, which meant they would be saved. To the Sangara people he gave a sign of red fire, which meant they would all die.

We note that this way of explaining the disaster is concerned with a precontact social macrosystem comprising two allied groups, the Sasembata and Isivita, and their traditional enemies, the Sangara. It is not concerned with the contemporary macrosystem which is the system of relations holding between Papuans, the government, and the mission. Neither the government nor the mission enters into the explanation. Furthermore, the explanation emphasizes the tribal boundary between the Sangara people and those designated as the Waseta tribe by Williams (1940).[14] It is, in fact, the opposition between Sangara and Waseta that is stressed by this explanation.

It is precisely this opposition that makes clear the strategic and manipulative nature of the argument. Waseta are using the occasion of the eruption to score a point against their old rivals and enemies the Sangara, who deserved to be punished as retribution for earlier acts of war. The explanation ignores the fact that ninety-two Waseta also were killed in the disaster.

At this point we recognize the explanation as part of a connotative system. Any reasonable explanation of the disaster would account for all the deaths. The division of the dead into tribal or ethnic groups is logically insignificant. In a connotative system,

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significance is assigned to this distinction for the purpose of stating some ideology.

Barthes (1964a) points out that in a connotative system the level of expression is "rhetoric" and the level of content is "ideology." This seems to describe the pattern accurately enough. The present explanation may be reduced to a rhetoric or moralistic vilification expressing a tribalist Waseta ideology. The rhetorical aspect is clear because in actual fact both tribes hunted on the mountain though only one was hit seriously by the disaster.

I now turn to a second explanation which deals with Orokaiva, though we have very few data on its currency among them. The explanation is contained in a report (undated but probably written shortly after the eruption) from Fred Kleekham, district agricultural officer, Popondetta, in which he describes a mission-sponsored "Christian Cooperative." This cooperative flourished among the Yega at that time where, in Kleekham's opinion, it "did indeed become a cult." Kleekham reports that members of the cult refused to have their rice hulled or bought by the government and that this was due to "some mystical element . . . involved in rice marketing." He continues:

> I think that more influential than the thought that Europeans would leave Papua as a result of cooperatives was the belief that the formation of and participation in cooperatives would—magically or mystically—in short time raise the native to the status of the European in all respects. . . . I am sure that this movement owed much to hanging of Orokaivas judged responsible for the murder of missionaries and the former officer in charge of the coffee project.
>
> It is interesting to recall that one group was prepared to do *anything* under European guidance to get money. Their message was "show us how to get the money to buy the guns." Later the Lamington eruption which obliterated the government station at Higaturu was regarded by many as payback for the hangings.

There is no evidence that this explanation of the disaster was ever held by any Orokaiva. It is more than probable that this explanation is that of the Yega, who are traditional exchange partners of the Orokaiva and enemies of the Sangara. It is among the Yega that Kleekham worked, and I am inclined to believe that the Yega widely accepted the views he reported. This would fit the facts as we know them. Certainly we should not expect the Orokaiva to explain the disaster by a theory which accounts only for

the death of the 45 Europeans on the mountain but not at all for the death of 4,000 Orokaiva and the destruction of hundreds of villages. It is far easier to understand such an explanation coming from the Yega, traditional enemies of the Sangara tribe, whose own losses through the disaster were very small. There is indeed no reason why the Yega should have been grief-stricken by the eruption at all. They were involved in an anti-European cult according to which the death of the administration personnel at Higaturu was thought nothing less than a divine blessing, while the misfortunes of the Sangara may well have been a further source of satisfaction. The Sangara survivors, who were quartered in an evacuation camp in Yega territory from February to April 1951, felt most uncomfortable there and very frightened that they too would be killed off by their old enemies through poisoning, sorcery, or other mischief.

The data do not enable us to say with certainty whether or not, in the Yega explanation, the eruption was actually caused by the anger of Sumbiripa. Benson (1955a, 1955b) describes the general atmosphere among the Yega immediately after the eruption, and from his account one gathers that the Yega, like the Orokaiva traditionalists, believed Sumbiripa was responsible, though he was credited with somewhat different motives. Kleckham is undoubtedly right that the public execution of the so-called collaborators, conducted by the Australian army in a spectacular and rather gruesome manner, caused much resentment among the various tribes of the Northern District. The Yega cooperatives of the late 1940s, described in some detail by Dakeyne (1966) and discussed in Schwimmer (1969:86–89), were led by two Anglican clergymen, Benson and Clint. They must therefore have believed that power would come to them through the intervention of the Christian God. Though the precise significance they attached to the eruption is not known, the context suggests that they must have regarded it as a sign that supernatural forces were working in their favor or at apy rate against their enemies.

The metalanguage used in the Yega explanation is that of a millenarian cooperative cult, arising in response to what was regarded as oppression and commercial exploitation. The eruption established a rule that supernatural agencies punish white people who hang Papuans. In justification of the rule, there was again cogent empirical evidence. Most of the forty-five Australian victims of the

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eruption met their fate on the very same spot (Higaturu) where the executions took place some years earlier.

I include the Yega explanation in this study because it influenced the total regional communication system from which the Orokaiva derive their basic concepts. What is this regional system? It is certainly not a postcontact introduction, yet it has a very different significance now as compared to the last century.

Williams (1940, n.d.) shows that the external boundaries of the human race, as defined in Orokaiva myths, take in most of the population of the Northern District of Papua but do not extend beyond the Northern District. Internal boundaries drawn in the myths separate this population into a number of mutually hostile language groups, each specializing in the production or supply of certain distinctive products. It was an integral part of Orokaiva social thought to hold that permanent peace was impossible between the groups thus separated, although a truce was occasionally established and trade and intermarriage were regular occurrences. In this respect, the Cargo Cults of the early postcontact period (the Baigona Cult in 1912 and the Taro Cult in 1914) marked a radical innovation. The chief social message, especially of the Taro Cult, was that villages and tribes hitherto divided by strife should be united in brotherhood. The cult taught that the traditional tribal boundaries should be disregarded and all Papuans of the region were one people. This idea started in the coastal region but soon spread from there to Orokaiva territory (see Chinnery and Haddon 1917; Williams 1928).

At the time of the eruption, the coastal people were again involved in a millennial movement, the Christian Cooperative, which was spreading throughout the Orokaiva tribes. While tribal boundaries were a source of anxiety in all the evacuation camps (though the anxiety was more acute among Sangara relocated on the coast than among Orokaiva relocated at Ilimo), the possibility of a further development of the Christian Cooperative was still open, and this would have involved general acceptance of the Yega explanation of the disaster.

Comparing the Orokaiva and Yega explanations, we note that the cause of the eruption in both cases is the anger of Sumbiripa, although the Yega explanation is not entirely explicit on this point. Furthermore, both explanations take a rather negative view of European power—one by ignoring it, the other by making it the ob-

ject of the wrath of the mountain. There are, however, two interesting differences. The first is that in the Orokaiva explanation we find an opposition between two tribes (Waseta innocent; Sangara guilty). In the Yega explanation we find an opposition between ethnic groups (Papuans of the Northern District innocent; Europeans guilty). This classing together of the Papuans of an entire region is a departure from traditional tribalism. It reflects an ideology aimed at maximizing indigenous power by the establishment of an intertribal regional coalition.

The second difference lies in the role of Sumbiripa (or whoever the angry deity was) in the two explanations. In the Orokaiva version, the transgression was against the sacred domain of Sumbiripa and thus of a familiar traditional type. In the Yega version, the punishing God assumes a strangely political role in taking the side of the Papuans against their enemies, the whites. The crime of the whites admittedly took place near the mountain, though not in the sacred domain. Sumbiripa was never, in any other context, described as a general defender or avenger in support of "his" people. Indeed he seems to be playing a somewhat Jehovah-like role in this tale. We are here in the sphere of the Cargo Cults or millennial movements rather than in that of traditional Melanesian religion.

Meanwhile no mention is made of the 3,500 Sangara who died in the disaster. This would have weakened the argument, for any reference to the Sangara victims might have suggested that they too were worthy of punishment. Though the Yega probably do think so, it would not have been expedient to say so when an intertribal alliance was contemplated. Here we are obviously closer to ideological rhetoric than to philosophical speculation.

The third explanation of the disaster is the one that has attracted the most attention by previous writers. Belshaw, who met Orokaiva survivors a few weeks after the eruption, records the following observations (1951:242):

> Some people said that this was God's visitation because they had disobeyed the Bishop's instructions to build new churches. Others said that God had punished them because they had not helped the Allies sufficiently during the war and because some of them betrayed missionaries to the Japanese. [Others again mentioned] lack of cooperation in Mission and Government plans for development. . . . This sense of guilt is a most important factor in resettlement attitudes.

Keesing (1952:18) agrees with this summary, adding that the eruption resulted in "strong feelings of insecurity and even of guilt in their retrospective look at the pre-eruption way of life."

A great deal of evidence supports Belshaw and Keesing in their suggestion that in 1951 the Orokaiva ascribed the eruption to the anger of the Christian God and thought they had brought this anger on themselves by various transgressions. Orokaiva informants reported that this view of the eruption was widely current at Ilimo evacuation camp. It is reflected in a song about the eruption which is still sung by Sivepe youth. This song declares the omnipotence of God and man's absolute dependence on him. It also attests to a wholly Christian eschatology: the abode of the dead is Heaven, where the living will later meet their brothers who died in the eruption. The song admits the guilt of the dead ('our brothers on earth had many temptations'), but the strongest emphasis is on the suffering of the living through the loss of their 'brothers'. Unlike Job, the singer is far too polite to contend with God and criticize his actions. He does not openly and clearly identify God as the author of his sufferings, but God's responsibility is subtly implied.

The rationale of this explanation is not obvious. Quite clearly those who believe that God and not Sumbiripa was responsible for the disaster have some belief in Christianity. In response to contact with the white man they have developed an ideology supporting the work of the missions. But how do they explain the eruption? It seems very clear that in 1951 many explained it as retribution for their lack of respect for the Christian God. But Orokaiva Christians interviewed in 1966 and 1967 rejected this explanation as resting on a misunderstanding of the nature of God. Father Albert, who composed the song referred to above, was one of those questioned. He said that many of those who died in the eruption were little children. He did not think God would punish the innocent along with the guilty. On the other hand, he did ascribe a divine purpose to the eruption. Father Albert said the Orokaiva used to have no idea of the end of the world; this notion was taught by Christianity. After the disaster the people discussed it a great deal: when they saw the sky darken and people dying from the blast, they thought the end of the world had come. God had shown them what the end would be like. In other words,

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Father Albert thought that God sent the eruption as a sign. Orokaiva Christians would generally agree with this view, though none of those interviewed formulated it so clearly.

From the viewpoint of this study, the question whether the Orokaiva considered the eruption as a punishment or as a sign is perhaps not a crucial one. In either case, whoever believes that God was responsible must also believe that a dire fate awaits anyone who fails in his obligations to the mission.

Comparing the three explanations surveyed so far, we note that the Christian explanation, like the Yega one and unlike the Waseta version, attached no significance to tribal divisions. God (like the Sumbiripa of the Yega) makes no distinction between tribes, but he does distinguish between the disobedient Papuans of the region and the administrators and missionaries these Papuans failed to obey. The former are guilty but not the latter.

Christian and Yega theories are opposed as to who is the guilty party. Indeed, the Christian explanation omits all reference to European deaths on the mountain, just as the Yega version suppressed the fact of the Sangara victims. The reason is no doubt the same: rhetoric demands that one should not in the same breath advocate a coalition with the white power bearers and admit that the latter suffered many deaths in circumstances implying their guilt.

With regard to connotations, all three systems differentiate between either tribes or ethnic groups that fell victim to the disaster, even though such differentiation is insignificant for explanatory purposes. If we use a minus sign to designate the social groups classed as guilty and a plus sign for the groups classed as innocent (though in fact the latter, too, suffered serious losses), we find:

	Victims		
Explanation	Waseta	Sangara	European
Waseta	+	−	omitted
Yega	+	+	−
Christian	−	−	+

I shall briefly mention a fourth system, though the explanation it contained was put forward by a small minority and was but feebly believed. Several Orokaiva close to the mission maintain nowadays that the eruption was due solely to geophysical causes. The mission authorites put forward this explanation to counter criti-

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cism from white planters and public servants that the church, by preaching that the eruption was due to God's wrath, is pursuing obscurantist and reprehensible power politics. Orokaiva informants who adopted the geophysical explanation said that before the eruption they did not know about volcanoes but have now learned from the white man that a volcano operates according to certain natural laws.[15]

There is no magico-religious Orokaiva metalanguage in which this explanation can be expressed. On the other hand, its connotation is clear. The explanation marks an informant as highly educated, free of superstition, and a good friend of the whites (including the anthropologist). The explanation connotes that magico-religious theories are old-fashioned and geophysical theories are modern. It divides the social universe into old-fashioned people (whose views have become irrelevant) and modern people (who include the Europeans and a Papuan elite who befriend them). Such a division vitiates the regional unity envisaged by the Yega and Christian explanations.

The connotations of the four explanations I have presented can thus be expressed in a simple model based on two highly significant oppositions which arise in the macrosystem of the Northern District and in the changing system of ethnic boundary maintenance.[16] The first opposition is between refusal and acceptance of a relation of positive reciprocity with Europeans. The second opposition is between tribalism and ideologies envisaging the unity of the Papuan tribes of the region.

Connotation	Explanation			
	Waseta	Yega	Christian	Geophysical
Rejection (−)/acceptance (+) of Europeans	−	−	+	+
Absence (−)/presence (+) of regionalism	−	+	+	−

ANALYSIS OF THE METALANGUAGES

Our next task is to analyze the evidence for Orokaiva systems of thought in which notions like 'the anger of Sumbiripa' and 'the anger of God' become fully comprehensible. We shall soon find

biripa' in terms of a simple transactional sequence. The 'anger of God' can be similarly explained, though here the sequence is more complex. As a general device for constructing metalanguages, transactional sequences are of course wholly inadequate. I have, however, indicated that in the Orokaiva cognitive system God is classified as an exchange partner (though more powerful than all other possible partners).

The eruption thus becomes one of a sequence of signs which express the development of the exchange partnership with God. Similarly, in other explanatory systems, the eruption becomes part of a sequence of exchanges with Sumbiripa. It follows from this argument that the eruption changed the relationship with God or Sumbiripa, in the sense that a sign of such magnitude provoked a response. While the sign may have existed as such only in the minds of the Orokaiva, the response was on the level of real social, economic, political, and religious behavior. The general form of Orokaiva metalanguages, as exemplified in the case of the eruption, is sketched in figure 1.

EXPLANATIONS AND THE COGNITIVE SYSTEM

We have now surveyed the four explanations given of the eruption of Mount Lamington. In my discussion of the denotative systems, I concentrated on two of them: the anger of Sumbiripa and the anger of God. I did not specifically discuss the geophysical explanation because it was too summary for analysis, nor did I analyze the Yega explanation further because of the uncertainty about the agent of vengeance. We have seen that the four explanations were, in each case, not only a psychological response to calamity and a philosophical exercise but also expressed ideologies essentially unconnected with the eruption and that, in this respect, discourse about the eruption was actually rhetoric used to express the ideology.

The coexistence of four such ideologies in the same society poses obvious questions about their interrelations. Were they held by separate groups who did not communicate? Did they reflect divisions within the society? Furthermore, a formal problem arises: as these four explanatory systems all arise in one, fairly homogeneous society, are they in a sense cognate and do they display features of homology? On the basis of Orokaiva data, it may be possible to

121 construct a higher-level system which accounts for all the explanations taken together.

731 Let us first survey the relationships between the explanatory systems on the social level. They do not logically contradict one 809 another: they can be and are held simultaneously by the same peo- 184 ple. There is no need to believe that the eruption was caused *either* by God *or* by Sumbiripa nor that the intended victims were *either* [718] Orokaiva *or* Europeans. My informants did not seem to view God and Sumbiripa as wholly distinct. Whether one ascribed the eruption to one or the other depended on the context of the discourse. Most Orokaiva do connect the death of European public servants and army personnel at Higaturu with the hangings that occurred after the war. They believe that these Europeans acted wrongly and that God punished them. But at the same time they believe that the eruption was a sign of God's anger toward the Orokaiva who had not followed the laws of the Church of England.

One cannot, therefore, gauge the relative strength of the three ideologies by counting what proportion of a sample of Orokaiva informants subscribes to one or another of the three explanations. One can, however, evaluate the general effect of each of the three ideologies. The belief that Sumbiripa caused the eruption had only the mildest historical consequences—merely the reinforcement of a hunting taboo. The belief that the mountain erupted to punish Europeans might have become historically important if the mystical Yega cooperative movement had grown to a major millennial [704] cult, but this did not happen. In fact, the Yega cooperatives went into a decline after 1951, owing to crop failure, the departure of its advisors, and governmental opposition in the form of economic and legal obstacles.

731 None of these reasons would have sufficed to kill the movement 657 had there been, in the 1950s, a strong opposition to the adminis- 709 tration of the Northern District. There is, however, no evidence of this. On the contrary there was, between 1951 and 1967, steadily increasing support for the ideologies advocated by government and mission. In this context the theory blaming the eruption on previous noncooperation by Orokaiva obtains some historical significance. It would be absurd to suggest that the increased support can actually be explained by the existence of the Orokaiva theory about the eruption. On the other hand, this support is now undoubtedly more powerfully motivated than if the eruption had

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never occurred. The vast increase in the number of baptisms indicates a significant development in the pattern of transactions in the exchange relations with the new god.

The effect should not, however, be overestimated, as the environment and the socioeconomic situation did not change significantly immediately after the eruption. No socioeconomic transformation occurred because of the eruption or the belief that the eruption itself was divine retribution for noncooperation with the government. On the other hand, significant social, political, and economic changes did happen within ten years or so of the eruption; and when these changes occurred, they were interpreted in a manner consistent with the Christian explanation of the eruption.

Let us now consider the relationship between the various explanations on the religiophilosophical level. Perhaps the best starting point for our analysis is our apperception that the three religious explanations have to do with political strategies—that is, with the maximization of power. It may be enlightening to look at these strategies in terms of the Orokaiva's own general ideas about power. The Orokaiva word for 'power' is *ivo*, a mana-like concept envisaging 'power' as derived from spirits and bringing success in difficult ventures by overcoming misfortune, obstacles, and enemies. Misfortunes are explained by 'power' coming from a hostile source—for instance, from one's human or spirit exchange partner during a cycle of negative reciprocity.

The first of these three explanations postulates the existence of a negative exchange cycle with Sumbiripa, so that the people's 'power' depends on placating Sumbiripa and avoiding his anger in the future. The second explanation postulates that, in fact, the disaster was a restoration of the 'power' of the Papuans, as it punished Europeans who hanged Orokaiva ambushers. The third explanation, however, raises some difficulties. The restoration of 'power' here seems to depend on obedience which must be shown to the mission and the government.

This question of obedience is perhaps more one of degree than of essence. Students of religion (such as van der Leeuw 1938) distinguish between relations of "manipulation" and "obedience" which may exist between man and the gods. In this sense the relations with Orokaiva deities, including Sumbiripa, would tend to be manipulative. On the other hand, the relationship with the Christian deity involves far greater and far more diffuse demands,

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so that the room for manipulation becomes greatly reduced. Furthermore, the church teaches a doctrine of obedience, which the Orokaiva nominally accept.

Taken at its face value, this would imply that the Orokaiva are satisfied to subordinate themselves to mission and government and do not consider themselves capable of serious competition with white authority. Such a notion of 'power'—that is, that it depends on obedience to white foreigners—has no rational basis in Orokaiva thought, since the bearer of 'power' cannot be subordinate to human power but only to spirit power. There are thus only two reasonable possibilities: either the ideology which made the eruption into a punishment by the Christian God denies the possibility that the Orokaiva henceforth can have 'power', or that ideology must make some distinction between, on the one hand, God and the principle of rightful authority (which should be obeyed on the pain of dire penalties) and, on the other hand, the existing ecclesiastical and political power bearers (who need not be regarded as having perpetual rightful authority). The position taken by Orokaiva informants on this question is not in the least ambiguous.

The Orokaiva are willing to obey the present power bearers, but only on the ground that they feel unready at present to assume power themselves. They regard the existing relationship as temporary. They are able to state this openly, since the Australian administration claims to prepare the way for early autonomy and optional independence. On the surface, there appears to be no acute political conflict.

In fact, however, the 'new age' ideology is fiercely competitive. The activities it advocates are perceived by Orokaiva as leading to a balance of power between the Europeans and themselves. The strong interest in schooling, savings clubs, coffee production, village improvement, wage labor, and so forth was explained time and again by the argument that these activities would ultimately place Papuans on the same level as Europeans and would remove the power differential. It was explained that in the 'new age' one no longer kills and eats the enemy because victory must now be achieved by different means. The reforms advocated by mission and government are perceived as the first weapons in the armory needed for victory. Victory, however, should not be understood here in the European sense, where it implies a permanent defeat of

the enemy, but rather in the Papuan sense, where one contends with exchange partners in an inconclusive tug-of-war and the strength of the opponents is approximately equal. Victory, in other words, is the establishment of an equal rather than an unequal relationship.

Given this view of the European-Orokaiva relationship, it is difficult to distinguish between millenarian and gradualist ideologies among the Orokaiva. They are all, in a sense, millenarian, even though they advocate full collaboration with both mission and government. From the more objective view I have taken here, the three Orokaiva ideologies present at the time of the eruption all convey the same message. They are all concerned with the restoration of what the Orokaiva call 'power', which always implies some form of power balance between themselves and their colonial masters.

IDEOLOGY, POWER, AND LAND

As we have seen, all Orokaiva discourse about the eruption can be reduced to one basic theme: competition for power between Papuans and Europeans. I have not surveyed administration discourse about the eruption in the same detail, but it is safe to say that, apart from the mechanics of relief, the administration was likewise concerned with one central ideological theme, namely socioeconomic development. Our structural analysis would hardly be adequate unless we considered the relation between these two ideologies, not only in abstract terms but also in the framework of concrete events.

During the period immediately after the disaster, the administration planned to make the evacuation camps the beginning of permanent relocation under conditions where socioeconomic development throughout the region could be accelerated (Belshaw 1951; Keesing 1952; Plant 1951). While this relocation was being planned, the evacuees were adamant that they wished to go home as soon as possible (Belshaw 1951; Kaad, personal communication). That the administration gave in to the evacuees should not be regarded as a Papuan demonstration of their own power but rather as a necessary response to practical problems facing Orokaiva as swidden agriculturists lacking a secure system of individual, unencumbered landholding. The circumstances of the closing

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10. Compare this with the school at Sasembata, which teaches to grade six.
11. A small band of Orokaiva captured European fugitives, including male and female missionaries, and handed them over to the Japanese. The members of this band came from the area east of Mount Lamington inhabited by what Williams called the Sauaha tribe.
12. Though the Sumbiripa cycle of myths was not noted by Williams, I feel confident it existed prior to 1951, partly on evidence given in Schwimmer (1969) and partly on the evidence of a myth recorded in Belshaw (1951).
13. For sources on Orokaiva leadership, see Reay (1953) and Schwimmer (1967).
14. The term "Waseta tribe" used by Williams is perhaps unfortunate, as I demonstrated elsewhere (Schwimmer 1969:49–53). It is used here for the sake of convenience to group together the people from the Waseta area, all of whom were quartered at Ilimo evacuation camp. The name "Waseta" is not used as a tribal name by Orokaiva; it denotes no more than the village where Williams happened to do his fieldwork.
15. See also Waddell and Krinks (1968:16, fn. 3). In the final section of this chapter, I argue that the geophysical explanation is important for anthropological analysis, since it foreshadows structural change in the Orokaiva cognitive system.
16. These two oppositions are, as I understand it, singled out for detailed study in most of the chapters in this comparative volume. Unfortunately, a more detailed discussion is impossible in this chapter. Transactions between government and people during the relocation process have been described fully in Schwimmer (1969), including the massive administration intervention in the evacuation camps, the changes of location of government and mission centers after the eruption, and the gradual widening of the scope of government and mission activities. In my earlier report, I also referred in detail to the manner in which the relation between whites and Papuans is mediated by Papuan mission teachers, village constables, and other functionaries. On an ideological level the entire 'new age' rhetoric discussed in this chapter may be regarded as a form of mediation between microsystem and macrosystem.

With regard to boundary maintenance, empirical evidence is available in my earlier report about the relations between the evacuees and the people among whom they lived. At Ilimo something akin to traditional friendly host-guest relations were established. I stress in the present essay the ambiguity of the boundary maintenance patterns. There is an ideology advocating unity and there is increasing evidence of common action, especially in the context of formal organizations set up under the influence of administration and mission, while individual webs of intertribal relationships tend to become denser as a result of migration associated with schooling, employment, and so forth. At the same time, tribalism is still the underlying principle in most transactional contexts.

17. This does not contradict my earlier statement (1969:66) that there was a brief period when the evacuees feared the government would take their land. Kaad reported to me that this fear existed, and I do not doubt it. In